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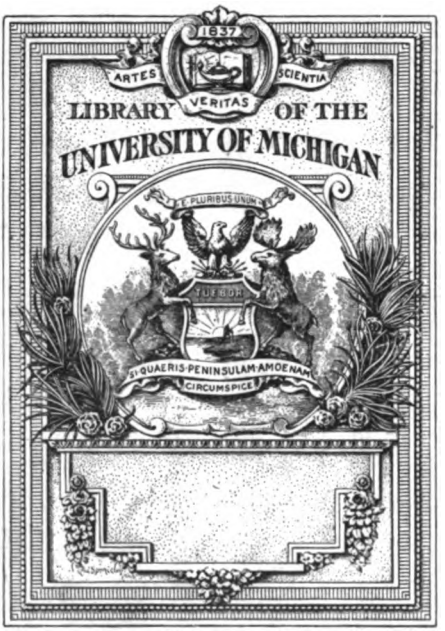

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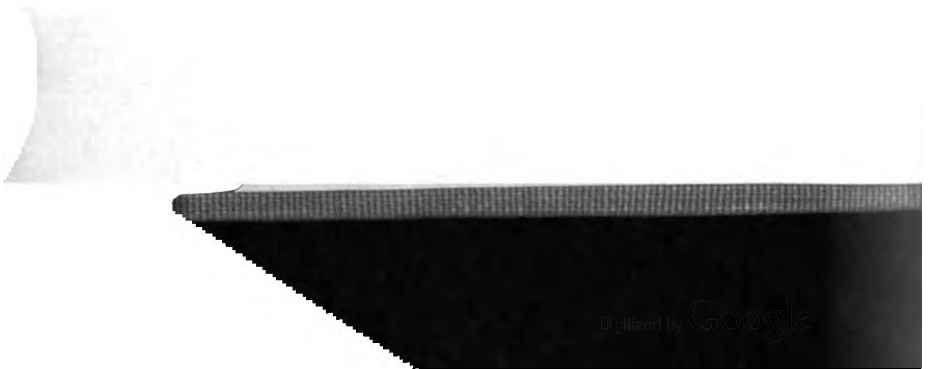
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DEPARTMENT OF COMMERCE AND LABOR

BULLETIN

OF THE

BUREAU OF LABOR

No. 77—JULY, 1908

ISSUED EVERY OTHER MONTH

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BULLETIN

OF THE

BUREAU OF LABOR.

No. 77. WASHINGTON. JULY, 1908.

WAGES AND HOURS OF LABOR IN MANUFACTURING INDUSTRIES, 1890 TO 1907.

This article presents the average wages per hour, the average hours of labor per week, and the number of employees, in both 1906 and 1907, in the leading wage-working occupations of 4,169 establishments in the principal manufacturing and mechanical industries of the United States. This report does not cover salaried employees in any industry. The figures shown, taken in connection with the summary figures from the Nineteenth Annual Report and from articles in Bulletins 59, 65, and 71 relating to wages and hours of labor, herein reproduced, bring into comparison all years from 1890 to 1907, inclusive.

In the year 1907 the average wages per hour in the principal manufacturing and mechanical industries of the country were 3.7 per cent higher than in 1906, the regular hours of labor per week were 0.4 per cent lower than in 1906, and the number of employees in the establishments investigated was 1.0 per cent greater than in 1906.

The variation in the purchasing power of wages may be measured by using the retail prices of food, the expenditures for which constitute nearly half of the expenditures for all purposes in a workingman's family. Retail prices of food are shown in the succeeding article in this Bulletin. According to that article the retail prices of food, weighted according to consumption in representative workingmen's families, were 4.2 per cent higher in 1907 than in 1906. As the advance in retail prices from 1906 to 1907 was greater than the advance in wages per hour, the purchasing power of an hour's wages, as measured by food, was slightly less in 1907 than in 1906, the decrease being one-half of 1 per cent.

As compared in each case with the average for the years from 1890 to 1899, the average wages per hour in 1907 were 28.8 per cent

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higher, the number of employees in the establishments investigated was 44.4 per cent greater, and the average hours of labor per week were 5.0 per cent lower.

The retail price of the principal articles of food, weighted according to family consumption of the various articles, was 20.6 per cent higher in 1907 than the average price for the ten years from 1890 to 1899. Compared with the average for the same ten-year period, the purchasing power of an hour's wages in 1907, as measured in the purchase of food, was 6.8 per cent greater.

The figures above quoted and other figures comparing wages, hours of labor, retail prices, purchasing power of wages, etc., in 1907 with other years are presented in the table on page 4.

The following table shows the per cent of increase or decrease in wages per hour and in hours of labor per full week in 1907 as compared with 1906 in the several industries covered by this report:

PER CENT OF INCREASE OR DECREASE IN WAGES PER HOUR AND IN HOURS OF LABOR PER WEEK IN 1907 AS COMPARED WITH 1906, BY INDUSTRIES.

Industry.	Wages per hour.		Hours per week.	
	Per cent of increase.	Per cent of decrease.	Per cent of increase.	Per cent of decrease.
Agricultural implements	1.2			0.3
Bakery, bread	1.2			.2
Blacksmithing and horseshoeing	5.4			.5
Boots and shoes	3.2			.3
Brick	3.0			.2
Building trades	3.1			.3
Candy	4.6			.2
Carpets	2.8		0.5	
Carriages and wagons	2.2			.5
Cars, steam railroad	5.0		(a)	(a)
Clothing, factory product	.3		(a)	(a)
Cotton goods	12.9			1.5
Dyeing, finishing, and printing textiles	3.1			.4
Electrical apparatus and supplies	.5			.7
Flour	3.1			.9
Foundry and machine shop	3.0			.2
Furniture	1.2		.1	
Gas	3.8			.4
Glass	5.8		(a)	(a)
Harness	1.6			.7
Hats, fur	1.0			.7
Hosiery and knit goods	5.5			.5
Iron and steel, bar	3.5		(a)	(a)
Iron and steel, Bessemer converting		0.9		1.1
Iron and steel, blast furnace	5.0		(a)	(a)
Leather	2.4		(a)	(a)
Liquors, malt	4.0			1.0
Lumber	3.2			.2
Marble and stone work	3.6			.1
Paper and wood pulp	10.1			3.5
Planing mill	3.3		(a)	(a)
Pottery	.8		(a)	(a)
Printing and binding, book and job	4.1			.7
Printing, newspaper	3.5			.6
Shipbuilding	2.7			.2
Silk goods	6.4			.4
Slaughtering and meat packing	.7		(b)	(b)
Streets and sewers, contract work	4.2			.6
Streets and sewers, municipal work	5.8			.5
Tobacco, cigars	1.0			.2
Woolen and worsted goods	6.4			.6
All industries	3.7			.4

a No change. b Not reported.

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An examination of this table shows an increase in wages per hour in 1907 as compared with 1906 in 40 of the 41 industries covered by this report. The greatest increase was in the manufacture of cotton goods, where the average wages per hour in 1907 were 12.9 per cent higher than the average wages per hour in 1906. In the manufacture of paper and wood pulp there was an increase in wages per hour of 10.1 per cent, in the manufacture of silk and of woolen and worsted goods of 6.4 per cent, and in the glass industry and in street and sewer work, paid for directly by municipalities, an increase of 5.8 per cent. In the building trades, the most important of the industries, there was an increase in wages per hour of 3.1 per cent. Briefly stated, two industries show an increase in hourly wages of more than 10 per cent, 8 industries an increase of 5 per cent but less than 10 per cent, and 30 industries an increase of less than 5 per cent. In one industry, iron and steel, Bessemer converting, there was a decrease of wages of 0.9 per cent. In the industries as a whole, weighted according to importance, the increase in wages was 3.7 per cent. The method of weighting the several industries is fully explained on pages 22 to 24.

The per cent of change in hours of labor in 1907, as compared with 1906, was not so great as the per cent of change in wages per hour. In 4 industries there was a decrease of hours of 1 per cent or more, while in 26 industries there was a decrease of less than 1 per cent. In 2 industries there was an increase in hours of labor per week; in neither instance, however, was the increase more than 0.5 per cent. Eight industries show no change in hours of labor. The hours of labor were not reported for slaughtering and meat packing, for the reason set forth in a footnote on page 58. The decrease in hours of labor in the industries taken as a whole, weighted according to importance, was 0.4 per cent.

The table immediately following shows for the industries, taken as a whole, the per cent of increase or decrease in wages per hour, hours of labor per week, the purchasing power of wages, etc., in 1907 in the manufacturing and mechanical industries, as compared with each year preceding, back to and including 1890, and as compared with the average for the ten years, 1890 to 1899. The figures comparing conditions in 1907 with 1906, shown on pages 1 and 2, are taken from this table.

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PER CENT OF INCREASE (+) OR DECREASE (−) IN 1907, AS COMPARED WITH PREVIOUS YEARS, IN EMPLOYEES, HOURS PER WEEK, WAGES PER HOUR, FULL-TIME WEEKLY EARNINGS PER EMPLOYEE, RETAIL PRICES OF FOOD, AND PURCHASING POWER OF HOURLY WAGES AND OF FULL-TIME WEEKLY EARNINGS PER EMPLOYEE, MEASURED BY RETAIL PRICES OF FOOD, 1890 TO 1907.

[A chart showing in graphic form the changes in employees, hours, wages, and retail prices will be found facing page 7.]

Year.	Per cent of increase (+) or decrease (−) in 1907 as compared with previous years.						
	Employees.	Hours per week.	Wages per hour.	Full-time weekly earnings per employee.	Retail prices of food, weighted according to family consumption.	Purchasing power, measured by retail prices of food, of—	
						Hourly wages.	Full-time weekly earnings per employee.
Average 1890-1899	+44.4	−5.0	+28.8	+22.4	+20.6	+ 6.8	+1.5
1890	+52.3	−5.7	+28.4	+21.2	+17.8	+ 9.1	+2.9
1891	+48.4	−5.5	+28.4	+21.4	+16.2	+10.6	+4.5
1892	+45.6	−5.5	+27.8	+20.8	+18.4	+ 8.0	+2.1
1893	+45.3	−5.3	+27.7	+20.9	+15.5	+10.6	+4.7
1894	+53.5	−4.8	+31.6	+25.3	+21.0	+ 8.8	+3.6
1895	+49.8	−5.1	+31.0	+24.4	+23.3	+ 6.3	+ .9
1896	+46.5	−4.8	+29.2	+23.0	+26.3	+ 2.3	−2.6
1897	+43.1	−4.6	+29.3	+23.4	+25.2	+ 3.3	−1.5
1898	+35.7	−4.7	+28.5	+22.5	+22.2	+ 5.2	+ .3
1899	+28.8	−4.2	+26.3	+20.9	+21.2	+ 4.2	− .2
1900	+24.9	−3.7	+22.1	+17.6	+19.3	+ 2.3	−1.5
1901	+21.2	−3.2	+19.3	+15.6	+14.6	+ 4.0	+ .8
1902	+16.8	−2.4	+14.8	+12.1	+ 8.7	+ 5.5	+3.0
1903	+14.2	−1.7	+10.7	+ 9.0	+ 9.3	+ 1.3	− .3
1904	+14.9	− .9	+10.1	+ 9.1	+ 8.0	+ 2.0	+1.1
1905	+ 8.1	− .9	+ 8.3	+ 7.4	+ 7.3	+ .9	+ .1
1906	+ 1.0	− .4	+ 3.7	+ 3.3	+ 4.2	− .5	− .9

Opposite each year in the table is given the per cent of increase or decrease (indicated by + or −) in 1907 as compared with the year specified. Thus, for example, in the fourth column, opposite 1890, appears +28.4, indicating that the increase in the wages per hour in 1907, as compared with 1890, was 28.4 per cent. In like manner, in the third column, opposite 1890, appears −5.7, indicating that the decrease in the hours of labor in 1907, as compared with 1890, was 5.7 per cent.

As before stated, the average wages per hour of wageworkers in the manufacturing and mechanical industries of the country were 3.7 per cent higher in 1907 than in 1906. This per cent (+3.7) appears in the column headed "Wages per hour" opposite the year 1906. In inspecting the percentages in this column it is seen that there was an increase in the average wages per hour in 1907 over the average wages per hour in each preceding year of the period covered; that is, from 1906 back to 1890. The increase in 1907 over 1905 was 8.3 per cent, over 1904 the increase was 10.1 per cent, and over 1903 the increase was 10.7 per cent. The increase in 1907 was more than 20 per cent over the average hourly wages in any year from 1890 to 1900, and 28.8 per cent over the average for the ten years

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from 1890 to 1899. Wages in 1907 were 31.6 per cent higher than in 1894, the year of lowest wages per hour in the period.

The average hours of labor per week of wage-earners in the manufacturing and mechanical industries were lower in 1907 than in any preceding year of the period. The hours of labor in 1907 decreased 0.4 per cent as compared with 1906 and 0.9 per cent as compared with the years 1904 and 1905, the average hours of labor being the same in those two years. There was a decrease of 1.7 per cent in 1907 as compared with 1903, a decrease of 2.4 per cent as compared with 1902, and a decrease of 3.2 per cent as compared with 1901. As compared with 1890 there was a decrease of 5.7 per cent, and as compared with the average from 1890 to 1899, a decrease of 5.0 per cent.

The figures for employees relate only to the number of employees in the selected occupations covered by the report in the establishments investigated. There was an increase of only 1 per cent in the number of employees in 1907 as compared with 1906, an increase of 8.1 per cent as compared with 1905; an increase of 14.9 per cent as compared with 1904; an increase of 14.2 per cent as compared with 1903; an increase of 16.8 per cent as compared with 1902, and an increase of 21.2 per cent as compared with 1901. As compared with 1894, the year in which wages and the number of persons employed were the lowest during the period, there was an increase of 53.5 per cent in the number of employees. As compared with the average for the ten years from 1890 to 1899 there was an increase of 44.4 per cent in the number of employees. These figures do not take into consideration the development of new industries within the period or the increase in the number of establishments in the several industries covered by the report, hence the actual increase in the number of employees in 1907 engaged in the manufacturing and mechanical industries of the country may be somewhat greater than is shown by these figures.

As there has been a general decrease in the hours of labor accompanying the general increase in wages per hour, a column is given in the table showing the full-time weekly earnings per employee in order that a study may be made of earnings per week as well as of wages per hour. The figures here given for weekly earnings are based on full-time work; as fully explained on page 16 the amount of time actually made per week by employees is not covered by this report.

There was an increase in the full-time weekly earnings per employee in 1907 as compared with 1906 of 3.3 per cent; as compared with 1905, of 7.4 per cent; as compared with 1904, of 9.1 per cent; as compared with 1903, of 9.0 per cent, and as compared with 1902, of 12.1 per cent. In 1907, as compared with the average for 1890 to 1899, there was an increase of full-time weekly earnings per employee

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of 22.4 per cent, and as compared with 1894, the year of lowest wages, there was an increase of 25.3 per cent.

As before stated, figures relating to retail prices of food, from the second article in this Bulletin, furnish a measure of the purchasing power of wages. It is shown by these figures that in 1907 there was an increase in the retail price of food, weighted according to family consumption, of 4.2 per cent as compared with 1906, an increase of 7.3 per cent as compared with 1905, an increase of 8.0 per cent as compared with 1904, an increase of 9.3 per cent as compared with 1903, an increase of 8.7 per cent as compared with 1902, and an increase of 14.6 per cent as compared with 1901. The retail price of food was 26.3 per cent higher in 1907 than in 1896, the year of lowest prices, and 20.6 per cent higher than the average price for the ten years, 1890 to 1899.

For a number of years there has been a general increase in wages per hour and in retail prices of food. The increase, however, has not been uniform in the two items named, as will be seen from the table on page 4. In 1907 an hour's wages would purchase 0.5 per cent less food than in 1906, but they would purchase 0.9 per cent more food than in 1905, 2.0 per cent more food than in 1904, 1.3 per cent more food than in 1903, 5.5 per cent more food than in 1902, 10.6 per cent more food than in 1891 and in 1893, and 6.8 per cent more food than for the average of the ten years, 1890 to 1899.

A full week's earnings would purchase 0.9 per cent less food in 1907 than in 1906; 0.1 per cent more food than in 1905; 1.1 per cent more food than in 1904; 0.3 per cent less food than in 1903, and 3.0 per cent more food than in 1902. The increase in the purchasing power of a full week's earnings was 1.5 per cent in 1907 as compared with the average during the ten years from 1890 to 1899. It will be seen that the purchasing power of a full week's wages was less, however, in 1907 than in six of the preceding years covered by the report.

In using these figures it must be remembered that no attempt is made in this report to measure the purchasing power of wages by any class of the necessaries of life other than food.

The table on page 4 shows the per cent of increase or decrease in average wages per hour, in hours of labor per week, and in other items in 1907, as compared with each of the several years back to 1890. The following table and the accompanying graphic chart, which is drawn from the table, show for the eighteen years, 1890 to 1907, the relative wages per hour, the relative hours of labor per week, the relative number of employees covered by the report in the establishments investigated, and the relative retail prices of food. Figures are also given in the table, but not used in the chart, which show relative full-time weekly earnings per employee and relative

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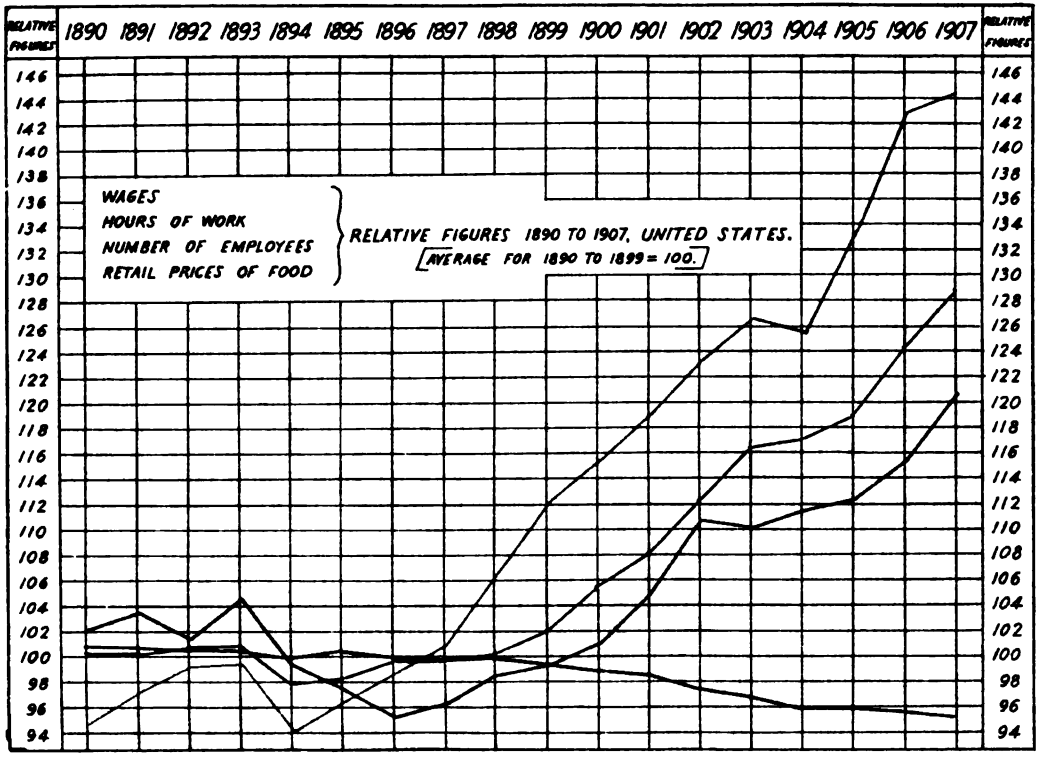
RELATIVE FIGURES
1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907
RELATIVE FIGURES
146 144 142 140 138 136 134 132 130 128 126 124 122 120 118 116 114 112 110 108 106 104 102 100 98 96 94
WAGES
HOURS OF WORK
NUMBER OF EMPLOYEES
RETAIL PRICES OF FOOD
RELATIVE FIGURES 1890 TO 1907, UNITED STATES.
AVERAGE FOR 1890 TO 1899 = 100.
RELATIVE WAGES PER HOUR
RELATIVE HOURS PER WEEK
RELATIVE NUMBER OF EMPLOYEES
RELATIVE RETAIL PRICES OF FOOD WEIGHTED ACCORDING TO AVERAGE CONSUMPTION IN 2567 WORKINGMEN'S FAMILIES.

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purchasing power of hourly wages and of full-time weekly earnings per employee as measured by retail prices of food.

The relative numbers shown are percentages, the base (100.0) being the average for the ten years 1890 to 1899. An extended explanation of the reason for selecting this base and of the method of computing and using the relative number is given on pages 18 to 21.

RELATIVE EMPLOYEES, HOURS PER WEEK, WAGES PER HOUR, FULL-TIME WEEKLY EARNINGS PER EMPLOYEE, RETAIL PRICES OF FOOD, AND PURCHASING POWER OF HOURLY WAGES AND OF FULL-TIME WEEKLY EARNINGS PER EMPLOYEE, MEASURED BY RETAIL PRICES OF FOOD, 1890 TO 1907.

[Relative numbers computed on basis of average for 1890–1899=100.0.]

Year.	Employees.	Hours per week.	Wages per hour.	Full-time weekly earnings per employee.	Retail prices of food, weighted according to family consumption.	Purchasing power measured by retail prices of food, of—	
						Hourly wages.	Full-time weekly earnings per employee.
1890	94.8	100.7	100.3	101.0	102.4	97.9	98.6
1891	97.3	100.5	100.3	100.8	103.8	96.6	97.1
1892	99.2	100.5	100.8	101.3	101.9	98.9	99.4
1893	99.4	100.3	100.9	101.2	104.4	96.6	96.9
1894	94.1	99.8	97.9	97.7	99.7	98.2	98.0
1895	96.4	100.1	98.3	98.4	97.8	100.5	100.6
1896	98.6	99.8	99.7	99.5	95.5	104.4	104.2
1897	100.9	99.6	99.6	99.2	96.3	103.4	103.0
1898	106.4	99.7	100.2	99.9	98.7	101.5	101.2
1899	112.1	99.2	102.0	101.2	99.5	102.5	101.7
1900	115.6	98.7	105.5	104.1	101.1	104.4	103.0
1901	119.1	98.1	108.0	105.9	105.2	102.7	100.7
1902	123.6	97.3	112.2	109.2	110.9	101.2	98.5
1903	126.5	96.6	116.3	112.3	110.3	105.4	101.8
1904	125.7	95.9	117.0	112.2	111.7	104.7	100.4
1905	133.6	95.9	118.9	114.0	112.4	105.8	101.4
1906	142.9	95.4	124.2	118.5	115.7	107.3	102.4
1907	144.4	95.0	128.8	122.4	120.6	106.8	101.5

Referring to the foregoing table it is seen that the relative wages per hour in 1890 were 100.3, indicating that the average wages per hour in 1890 were 100.3 per cent of the average wages per hour for the ten years from 1890 to 1899, inclusive, or 0.3 per cent higher than during the period named. The lowest point reached was in 1894, when the relative wages per hour were 97.9. From 1894 the movement was upward for two years; in 1897 there was a slight decline. From 1897 there was an advance each year. In 1907 the relative wages per hour reached 128.8, or 28.8 per cent more than the average for 1890 to 1899. Thus it is seen that wages per hour in 1907 in the manufacturing and mechanical industries of the country were higher than in any other year of the period covered.

In using these relative numbers it must be borne in mind that the per cent of change between one year and another is not the result of the subtraction of the two relative numbers. For example, the relative wages per hour in all industries were 97.9 in 1894 and 128.8

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in 1907. The difference between these two relative numbers is 30.9. The increase in wages per hour, however, from 1894 to 1907 was not 30.9 per cent. This difference in the relative numbers (30.9) is 31.6 per cent of 97.9, the relative number for 1894 with which comparison is made, making the wages per hour in 1907 31.6 per cent higher than the wages per hour in 1894. The per cent of difference in the relative numbers for any two years may be computed in like manner.

While wages per hour were higher in the manufacturing and mechanical industries in 1907 than in any other year covered by this report, the regular hours of labor per week were lower in 1907 than in any other year of the period. The table shows that in 1890 the relative hours of labor per week were 100.7, which means that they were 100.7 per cent of the average hours of labor per week for the ten years from 1890 to 1899, or 0.7 per cent more than the average for that period. From 1890 the weekly hours decreased until 1894, when the relative number was 99.8. In 1895 there was a slight increase, after which there was a gradual decrease to the minimum in 1907, the relative number for that year being 95.0, or 5 per cent less than the average hours worked during the base period, 1890 to 1899. It is seen from the table and from the chart that during the period covered the changes have not been so marked in hours of labor as in wages per hour, but the general course has been toward a reduction. The table on page 4 shows that the hours of labor in 1907 were 5.7 per cent lower than in 1890, while wages per hour were 28.4 per cent higher in 1907 than in 1890.

The relative number of employees covered by the report in the establishments investigated is shown in the second column of the table for each year of the period. The number of employees in each year covered by this investigation indicates in a general way the change in the number of employees in all of the industries of the country. As stated on page 5, these numbers, however, can not be accepted as an exact measurement of such change. The relative numbers given in this table, for the last few years at least, probably fall short of showing the general increase in the numbers of employees in all industries of the country. The table shows that the lowest number employed was in the year 1894, the relative number for that year being 94.1, which indicates that the number of employees equaled 94.1 per cent of the average number employed from 1890 to 1899. So far as the establishments investigated are concerned it is seen that the number of employees engaged therein gradually increased from 1894 until 1903, when their relative number was 126.5. In the year 1904 there was a decrease to 125.7; in 1906, however, the relative number increased to 142.9 and in 1907 to 144.4, the highest for the eighteen-year period.

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The full-time weekly earnings per employee in 1890 are expressed in the table by the relative number 101.0, meaning that they amounted to 101.0 per cent of the average full-time weekly earnings for the base period, 1890 to 1899. The lowest earnings for the eighteen years covered were in 1894, when they were represented by the relative number 97.7. There was a gradual increase to 112.3 in 1903, a slight decrease in 1904, and in 1907 the maximum 122.4 was reached, showing that in that year full-time weekly earnings exceeded the average for 1890 to 1899 by 22.4 per cent.

The relative retail prices of food given in this table are brought forward from the second article in this Bulletin that a comparison may be made with relative wages. In 1890 the relative retail price of food was 102.4; that is, the price in that year was 102.4 per cent of the average retail price from 1890 to 1899, the base period. In 1891, 1892, and 1893 the relative numbers were 103.8, 101.9, and 104.4, respectively. In 1894 there was a sharp decline in the retail price of food, accompanying the reduction in wages per hour, and the prices continued to decline until 1896 when they reached the lowest figure for the period covered, or 95.5. After this there was an almost continuous increase from year to year until 1907, when the highest price was reached, the relative price for that year being 120.6, or 20.6 per cent more than the average for the base period.

The purchasing power of hourly wages as measured by retail prices of food was lowest in 1891 and 1893, and is expressed by the relative number 96.6, which shows that an hour's wages in those years would purchase only 96.6 per cent as much food as an hour's wages would purchase on an average from 1890 to 1899. The figures fluctuated from year to year but there was an upward trend, the maximum being reached in 1906, when the relative purchasing power of an hour's wages was 107.3. In 1907 there was a slight decline to 106.8.

The purchasing power of a full week's earnings was greater in 1896 than in any other year of the period covered and is indicated by the relative number 104.2, which means that it was 104.2 per cent of the average for the base period, 1890 to 1899. In 1897 and 1900 the relative purchasing power of a full week's earnings was 103.0 and in 1906 it was 102.4, declining to 101.5 in 1907.

The relative wages per hour, the relative hours of labor per week, and the relative number of employees in each occupation covered by this investigation are given in Table II, pages 61 to 125. Similar relative numbers for each industry are given in Table III, pages 126 to 132. These tables give the relative numbers for each year from 1890 to 1907, inclusive, and indicate plainly the changes that have occurred from year to year.

The following table shows the per cent of increase or decrease in wages per hour and in hours of labor per week in 1907 as compared

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with the average for the ten years from 1890 to 1899 in each of the 41 industries covered by this report:

PER CENT OF INCREASE OR DECREASE IN WAGES PER HOUR AND IN HOURS OF LABOR PER WEEK IN 1907 AS COMPARED WITH THE AVERAGE FOR 1890–1899, BY INDUSTRIES.

Industry.	Wages per hour.		Hours per week.	
	Per cent of increase.	Per cent of decrease.	Per cent of increase.	Per cent of decrease.
Agricultural implements	30.9	.....	.....	3.7
Bakery, bread	28.9	.....	.....	8.4
Blacksmithing and horseshoeing	26.4	.....	.....	5.9
Boots and shoes	24.3	.....	.....	4.0
Brick	22.7	.....	.....	1.5
Building trades	44.6	.....	.....	9.4
Candy	24.4	.....	(a)	(a)
Carpets	17.1	.....	.....	1.4
Carriages and wagons	18.3	.....	.....	4.0
Cars, steam railroad	24.4	.....	.....	4.1
Clothing, factory product	15.8	.....	.....	3.3
Cotton goods	57.5	.....	.....	3.2
Dyeing, finishing, and printing textiles	11.3	.....	.....	.7
Electrical apparatus and supplies	22.6	.....	.....	6.7
Flour	16.0	.....	.....	3.3
Foundry and machine shop	21.4	.....	.....	5.4
Furniture	27.1	.....	.....	4.3
Gas	7.7	.....	.....	3.9
Glass	29.4	.....	.....	1.4
Harness	23.5	.....	.....	4.1
Hats, fur	26.4	.....	.....	8.4
Hosiery and knit goods	33.4	.....	.....	2.3
Iron and steel, bar	40.4	.....	.....	2.1
Iron and steel, Bessemer converting	32.6	.....	.....	9.5
Iron and steel, blast furnace	19.8	.....	0.6	.....
Leather	11.8	.....	.....	.1
Liquors, malt	32.9	.....	.....	13.0
Lumber	27.6	.....	.....	3.1
Marble and stone work	25.7	.....	.....	6.4
Paper and wood pulp	33.3	.....	.....	10.2
Planing mill	24.6	.....	.....	3.6
Pottery	13.8	.....	.....	.2
Printing and binding, book and job	31.0	.....	.....	9.9
Printing, newspaper	22.6	.....	.....	5.2
Shipbuilding	20.9	.....	.....	4.3
Silk goods	16.9	.....	.....	2.4
Slaughtering and meat packing	16.0	.....	(b)	(b)
Streets and sewers, contract work	45.7	.....	.....	7.3
Streets and sewers, municipal work	21.6	.....	.....	9.5
Tobacco, cigars	32.4	.....	.....	.5
Woolen and worsted goods	31.9	.....	.....	2.0
All industries	28.8	.....	.....	5.0

a No change. b Not reported.

The industry showing the greatest increase in wages per hour in 1907 as compared with the average for the ten years from 1890 to 1899 was cotton goods, in which the increase in wages per hour was 57.5 per cent. In street and sewer work done by contractors the increase in wages per hour was 45.7 per cent. Other industries showing an increase of more than 30 per cent are agricultural implements; building trades; hosiery and knit goods; iron and steel, bar; iron and steel, Bessemer converting; liquors, malt; paper and wood pulp; printing and binding, book and job; tobacco, cigars, and woolen and worsted goods. Eighteen industries show an increase in wages per hour of from 20 to 30 per cent, and 10 industries show an increase in wages of from 10 to 20 per cent. In not one of the 41 industries has

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there been a decrease in wages in 1907 as compared with the average for the ten-year period 1890 to 1899. The average increase in wages per hour in all industries, due weight being given to the importance of the several industries, was 28.8 per cent. The method of weighting the several industries is explained on pages 22 to 24.

Thirty-eight of the 41 industries show a decrease in the regular hours of labor per week in 1907 as compared with the average for the ten years from 1890 to 1899. The greatest decrease was in the industry, liquors, malt, in which the decrease in hours of labor was 13.0 per cent. The decrease in hours of labor in paper and wood pulp was 10.2 per cent; in printing and binding, book and job, it was 9.9 per cent; in street and sewer work done by municipalities direct, 9.5 per cent, and in the building trades, 9.4 per cent. Fourteen of the 41 industries show a decrease in hours of labor in 1907 as compared with the average for the ten years from 1890 to 1899 of more than 5 per cent. The only industry showing an increase in hours of labor in 1907 as compared with the average for the period named was iron and steel, blast furnace, with an increase of 0.6 per cent. The average decrease in hours of labor in all industries taken as a whole, due weight being given to the several industries, was 5.0 per cent.

The hours of labor in the slaughtering and meat-packing industries are not reported for the reason stated in a footnote on page 58.

EXPLANATION OF SCOPE AND METHOD.

This investigation constitutes the fifth of a series relating to wages and hours of labor. The results of an investigation of wages and hours of labor in the United States, covering the years from 1890 to 1903, were presented in the Nineteenth Annual Report of this Bureau. The results of the second investigation in this series, covering the year 1904, were presented in Bulletin 59; the results of the third investigation, covering the year 1905, were presented in Bulletin 65; and the results of the fourth investigation, covering the year 1906, were presented in Bulletin 71.

In making the investigation of rates of wages and hours of labor the design has been to secure such a quantity of data for the principal distinctive wage-working occupations in the leading manufacturing and mechanical industries in the United States as would be fairly representative of conditions and show the trend of wages and hours of labor. The investigation covers those industries in which the wages paid in the United States in one year were $10,000,000 or over as shown by the census of 1900. The office and field force available for the prosecution of the work has not admitted of the extension of the investigation to cover the less important manufacturing industries, or to cover transportation, mining, agriculture, and the other great industrial groups.

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The data presented in this article were secured in all cases by personal visits of special agents of the Bureau to the several establishments represented, and have been taken directly from the pay rolls and other records in existence and available for reference.

An examination of Table I shows that all occupations usually pertaining to the various industries are not covered. As has been mentioned, this is in accordance with the plan adopted of securing data for only certain important and distinctive occupations which are considered representative of each industry. This plan has resulted in a saving of time in the collection of the data, without materially affecting the representative character thereof. Data concerning all occupations engaged in each industry would be desirable, but the work necessarily has been restricted.

In outlining this investigation it was recognized that a comparison of wages and hours of labor for one year with those for another year could not be made for establishments as a whole, owing to the changes that so often take place in the relative number of persons employed in the several skilled and unskilled occupations engaged therein, and that comparisons, therefore, must be made within the limits of the occupation.

All occupations for which data are presented are not always to be found in a single establishment; for this reason the number of establishments for which data are reported is not the same for each occupation in an industry. The following table shows the industries covered in this article, the number of different occupations covered for each industry, the number of establishments in each industry from which data were secured, and the number of employees in each industry covered by the data secured:

INDUSTRIES, NUMBER OF OCCUPATIONS AND NUMBER OF ESTABLISHMENTS FROM WHICH REPORTS WERE SECURED, AND NUMBER OF EMPLOYEES COVERED, 1906 AND 1907.

Industry.	Number of occupations.	Number of establishments.	Number of employees.	
			1906.	1907.
Agricultural implements	12	23	6,145	6,015
Bakery, bread	1	153	2,395	2,457
Blacksmithing and horseshoeing	3	161	712	709
Boots and shoes	10	54	5,630	5,463
Brick	6	54	2,736	2,669
Building trades	20	1,515	46,284	45,537
Candy	2	44	1,762	1,935
Carpets	8	7	1,531	1,546
Carriages and wagons	7	74	4,607	4,638
Cars, steam railroad	16	47	33,434	35,933
Clothing, factory product	7	38	5,375	5,457
Cotton goods	6	38	13,360	13,537
Dyeing, finishing, and printing textiles	6	18	1,533	1,586
Electrical apparatus and supplies	5	9	2,804	2,865
Flour	5	47	3,441	3,521
Foundry and machine shop	11	267	26,908	27,612
Furniture	6	67	4,868	4,669
Gas	4	60	9,544	9,370
Glass	15	31	5,412	5,834
Harness	6	61	1,853	1,811
Hats, fur	14	15	4,448	4,895
Hosiery and knit goods	7	30	5,023	4,922

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INDUSTRIES, NUMBER OF OCCUPATIONS AND NUMBER OF ESTABLISHMENTS FROM WHICH REPORTS WERE SECURED, AND NUMBER OF EMPLOYEES COVERED, 1906 AND 1907—Concluded.

Industry.	Number of occupations.	Number of establishments.	Number of employees.	
			1906.	1907.
Iron and steel, bar	6	28	897	913
Iron and steel, Bessemer converting	6	17	308	313
Iron and steel, blast furnace	5	26	1,099	1,217
Leather	10	65	4,750	4,439
Liquors, malt	8	58	8,655	9,264
Lumber	10	75	11,220	10,979
Marble and stone work	11	207	5,458	5,316
Paper and wood pulp	14	31	4,172	4,575
Planing mill	6	120	7,703	7,764
Pottery	8	12	820	825
Printing and binding, book and job	8	197	7,971	8,227
Printing, newspaper	4	153	6,038	6,234
Shipbuilding	15	41	16,517	16,455
Silk goods	12	19	7,864	7,873
Slaughtering and meat packing	15	15	12,460	12,730
Streets and sewers, contract work	1	131	14,800	14,072
Streets and sewers, municipal work	1	72	25,147	28,179
Tobacco, cigars	7	60	10,996	10,930
Woolen and worsted goods	9	29	7,098	7,463
All industries	333	4,169	343,787	350,758

From the above table it is seen that data were obtained from 4,169 establishments representing 41 industries and 333 occupations, and that the data covered 343,787 employees in 1906 and 350,758 employees in 1907. In 30 of the 333 occupations data were secured and are shown for both males and females in the detail tables.

The work of almost every establishment fluctuates during the year according to the demands of trade. This fluctuation affects the number of employees and to some extent the wages and hours of labor. It was not possible for the limited force of the Bureau to secure data from the pay rolls of each establishment for an entire year so that the true average for the year might be computed. The only method practicable was to secure data from each establishment for that period of the year which most nearly represented the normal condition of the establishment during the year.

Employees are either time workers or pieceworkers. Time workers are persons paid by the hour, day, week, month, or year. The method of their payment is readily understood, and securing a statement of their wages is comparatively easy. The rate per piece paid to pieceworkers would convey but little information to the general reader, as all conditions under which the work is performed must be considered in connection with the piece rate. Also a full report on piece rates is not possible within the limits of this Bulletin article. For these reasons piece rates are not shown, but instead are shown earnings in a definite period of time. Data for pieceworkers were secured from those establishments only in which a record was kept of time worked or where the time worked to earn the wages paid could be determined approximately.

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A peculiar condition is sometimes found in the work of piece-workers. The speed of a pieceworker is regulated to a great extent by the amount of work before him. If work is pressing, his speed is high and his earnings are at their maximum. If work is slack, he is inclined to reduce his speed, and thus his earnings per hour are reduced, although no change has been made in his piece rate. In taking data from the several establishments care was exercised, as has been stated, to copy figures from the pay roll that most nearly represented the average or normal working conditions for the year.

All wages have been reduced to earnings per hour, in order that the data may be comparable. The working day is an uncertain unit, as the time actually worked may be long or short—eight hours, nine hours, ten hours, etc.—and the week, month, or year is a still more indefinite unit of time. Hence all wages, however shown on the pay rolls, have been reduced to the one definite standard—the rate per hour. The average wages per hour shown are true averages; that is, the individual rates of wages per hour of the several employees are added and the total divided by the number of employees.

In order to meet every possible demand that might be made upon a statistical publication it would be necessary first to present all data in minute detail and then to summarize in as many ways as practicable. An ideal report on wages would show the data for each individual employee, followed by a summarization showing the true average rate, the median rate, the quartile and decile rates, the maximum and the minimum rates, the predominant rates, classified rates, etc. Space and time, however, do not permit the publication in detail of the great mass of data on which this report is based nor all the summaries that with propriety might be made. The true average rate of wages of itself is not a full and complete summary of a series of rates, but it is believed that no other single expression or limited group of expressions is so comprehensive and so satisfactory for purposes of comparison as the true average rate when used within its proper sphere and based on accurate data.

An average rate of wages is of little value unless limited to an occupation. For example, a statement that the average wages of employees in a shoe factory is a certain number of cents per hour means but little, as it includes both sexes and many occupations with their varying degrees of skill, but a statement that the average wages of male upper cutters in shoe factories were 30.63 cents per hour in 1907 conveys a definite idea. Since all data presented in this report are for well-defined occupations, it is believed that the average rate is properly used in this respect.

The average rate of wages does not always express the facts fully as to the individual employees, for a change in the proportionate number of employees at different rates will make a change in the

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average rate, although no individual person in employment has had a change made in his rate of wages. The average rate, however, does represent the occupation as a whole.

Another objection to the use of the true average rate is that it is always affected, and sometimes quite materially, by the improper inclusion or exclusion of certain rates, especially if such rates fall at either extreme of the series of rates. It is sometimes a matter of judgment whether or not some particular employee shall be classed within an occupation, and especially is this true in a nonunion shop, where the line of demarcation between the helper and the journeyman often is not clear. The inclusion or exclusion of an extremely high or low rate must always affect, to some extent, the true average rate, while in a majority of cases it would not affect the median or the predominant rate. With all of the details given, the careful reader might accept certain rates with allowance or might possibly detect an error. Inasmuch, however, as all of the field work for this report was done by experienced agents of the Bureau, it is believed that few errors exist in such work and that a true average may properly and safely be made of the data gathered.

In preparing to secure data for 1907 copies were made of the data for 1906, obtained in the preceding year. These copies were placed in the hands of the special agents of the Bureau, who visited the establishments and secured 1907 data, and whenever any doubt arose verified or, if necessary, revised the data for 1906. The agents were also instructed to secure data from a few additional establishments, in order to give a better representation for the several industries and localities covered. Where data were obtained from additional establishments, figures were taken for both 1906 and 1907. All data for the two years, 1906 and 1907, shown in this article, therefore, are from identical establishments, and may properly be compared. During the course of the field work it was also found that a few of the establishments heretofore covered had gone out of business. With some establishments added and others discontinued it will be seen that the establishments from which data were secured for this Bulletin differ to some extent from the establishments shown in preceding reports on this subject.

With a change in the establishments reporting, some difference necessarily must be expected between the average hours of labor and average wages per hour shown for the year 1906 in Bulletin 71 and in this Bulletin. Two groups of establishments, even though many establishments are common to both groups, can not be expected to show exactly the same averages. Neither statement may be absolutely exact for the occupation as a whole throughout the country, yet if each group embraces a considerable number of establishments the average rates found may be accepted as representing approxi-

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mately the average rate in the occupation considered. The average based on the larger number of establishments probably would be the more nearly representative. To secure the exact average rate of wages and hours of labor for the United States it would be necessary to take a complete wage census of the United States, and, as previously stated, such a task is so great as to be practically impossible.

To measure with exactness the movement in wages and hours of labor it would not be proper to compare the average for one group of establishments for 1906 with the average for a different group of establishments for 1907, nor in practically the same establishments if any change or substitution of establishments whatever has been made. Comparison can be made accurately only when the data compared are obtained from identical establishments. As one of the principal objects of this series of reports is to measure the change from year to year as accurately as possible, increases and decreases from year to year are computed only on data taken from identical establishments.

A statement of rates of wages is incomplete without an accompanying statement as to hours of labor, as both factors must be known to determine the earnings on full time per week, month, or year. The average hours of labor are given in this report in connection with the average rates of wages. The average hours of labor shown are true averages, computed in the same manner as the average wages per hour.

The hours of labor given in this report represent the regular full time hours of the occupation—that is, the time that the employees as a class were engaged in work. No account has been taken of time lost by individual employees because of a desire not to work, of bad weather, or of slack work. It is no part of the purpose of this article to measure the amount of unemployment, and it must not be inferred that all employees engaged in the establishments reported in this article worked full time. To ascertain the time lost in a year by the employees remaining in the establishments a year would be a great task, while to ascertain with any accuracy the time lost by employees who have moved from one establishment to another would be practically impossible.

The sex of the employees for whom data are presented is shown for each occupation. In many occupations few, if any, females are employed, and in other occupations few, if any, males are employed. In such occupations data are given for one sex only. In a number of occupations, however, in which many persons of both sexes are employed, data are presented for both sexes, that the occupation may be properly represented.

The method of computing the relative numbers given in this report is set forth in the explanation of Tables II and III in the following pages.

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EXPLANATION OF TABLES.

The tabular matter of this article relating to wages and hours of labor is set forth in five general tables, and in the short tables shown in the text explaining and summarizing such general tables. The five general tables are entitled:

TABLE I.—Average wages and hours of labor, 1906 and 1907, by occupations and geographical divisions.

TABLE II.—Relative wages and hours of labor, 1890 to 1907, by occupations.

TABLE III.—Relative wages and hours of labor, 1890 to 1907, by industries.

TABLE IV.—Average wages and hours of labor, 1906 and 1907, in selected occupations, by cities.

TABLE V.—Average wages and hours of labor, 1906 and 1907, in selected occupations, by States.

Table I.—Average wages and hours of labor, 1906 and 1907, by occupations and geographical divisions (pp. 25 to 60).—This table presents a summarization of the data secured for each occupation in each industry, by geographical divisions and for the United States. The classification of the States into geographical divisions is as follows:

North Atlantic division:
- Connecticut.
- Maine.
- Massachusetts.
- New Hampshire.
- New Jersey.
- New York.
- Pennsylvania.
- Rhode Island.

South Atlantic division:
- Delaware.
- District of Columbia.
- Florida.
- Georgia.
- Maryland.
- North Carolina.
- South Carolina.
- Virginia.
- West Virginia.

North Central division:
- Illinois.
- Indiana.
- Iowa.
- Kansas.

North Central division—Concluded.
- Michigan.
- Minnesota.
- Missouri.
- Nebraska.
- Ohio.
- South Dakota.
- Wisconsin.

South Central division:
- Alabama.
- Arkansas.
- Kentucky.
- Louisiana.
- Mississippi.
- Tennessee.
- Texas.

Western division:
- California.
- Colorado.
- Montana.
- Oregon.
- Utah.
- Washington.

In Table I (p. 25) the second column shows the number of establishments from which data were secured for both 1906 and 1907. The next two columns show the number of persons employed in 1906 and 1907, respectively, in the establishments from which data were secured. The two columns following show the average number of

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hours worked per week in each of the two years in these establishments, while the last two columns on the page show the average wages per hour in each of the two years covered.

The averages shown are true arithmetical averages. They are obtained by finding the aggregate hours worked per week by all workers and the aggregate earnings per hour, and dividing these aggregates by the total number of persons considered.

An illustration will assist in explaining the table. The figures for bricklayers in the building trades are presented on page 28. Data for this occupation were secured for both 1906 and 1907 from 73 establishments in the North Atlantic division. In these establishments 1,994 persons were employed in 1906 and 1,928 persons in 1907, a decrease of 66 persons. The average hours of work per week of these employees were 45.65 in 1906 and 45.67 in 1907, an increase of 0.02 of an hour per week. In 1906 the average wages per hour were $0.6103 and in 1907, $0.6148, showing in this occupation an increase in wages of $0.0045 per hour in the North Atlantic division.

Were the figures shown in Table I not used to measure the trend from one year to another the decimals of the hour and of the cent might well be dropped from the table. But while a slight difference is not material in itself, in the presentation of a representative wage or period of labor, such difference is very material when indicating a trend or movement upward or downward in wages or hours of labor. As stated before, the establishments that reported the data for 1906 shown in this Bulletin are the same as those that reported the data for 1907, hence there is opportunity for an exact comparison between the number of employees, the hours of labor, and the wages per hour in 1906 and in 1907, and the figures may safely be used to indicate and measure the trend or movement upward or downward of employees, hours, and wages in the several occupations and localities covered.

Table II.—Relative wages and hours of labor, 1890 to 1907, by occupations (pp. 61 to 125).—In Table I actual or concrete numbers only are shown, and such figures relate only to the two years 1906 and 1907. No attempt has been made to join the actual numbers expressing employees, hours, and wages for 1907 to the actual numbers for the period from 1890 to 1906, shown in the Nineteenth Annual Report and in Bulletins 59, 65, and 71. On page 16 an explanation has been given why such a combination can not be made.

By the use of the relative numbers, however, presented in Table II, an opportunity is given to study the extent of the change or trend in wages, hours of labor, and the number of employees during the period from 1890 to 1907, inclusive, in each occupation covered. The relative numbers given in Table II are percentages which indicate the relative standing of any one year when the actual figures for that year are compared with a definite base or standard of measurement.

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The base adopted as a standard for comparison is an average for the ten years 1890 to 1899.

In explanation of this table an illustration may be taken. On page 66 there is given the relative number of employees, the relative hours per week, and the relative wages per hour of bricklayers each year from 1890 to 1907, inclusive. Under relative wages per hour the first relative number given is 100.0, the average for the ten years from 1890 to 1899, which is taken as the standard of measurement. Opposite 1890 is given the relative number 98.4, indicating that wages per hour in 1890 were 98.4 per cent of the average wages per hour during the ten-year period named. An examination of the other figures in the column shows that wages per hour increased during the next three years; in 1894 they decreased, however, to 98.6. For a few years there was no great change, but beginning with 1899 there was marked advance each year until in 1907 the relative wages per hour were 140.9, meaning that the wages per hour in that year were 140.9 per cent of the average wages per hour during the ten years 1890 to 1899, or in other words, 40.9 per cent higher than the average wages during that period.

Possibly these relative numbers might be more easily understood if some one year were taken as the standard of comparison, but because of abnormal conditions that might exist in any single year in certain occupations or industries, it has been deemed advisable to use the broader base, the average for a decade.

The value of the relative number is (1) that it enables the reader to see more readily the extent of the change in wages, hours of labor, and number of employees of an occupation; (2) that it permits the combination of the wage data of the several occupations of an industry when an average of the actual money wages, for the industry, as explained on page 12, would be a number of no significance, and (3) that it permits the continuation of a series of data when, for any reason, figures from one establishment are discontinued and figures from another establishment showing somewhat different wages and hours of labor are substituted, which data, though differing somewhat from those formerly quoted, equally well represent the trend of wages and hours of labor in the occupation and industry considered.

In Table II the figures for the years from 1890 to 1903 are from the Nineteenth Annual Report, the figures for 1904 are from Bulletin 59, the figures for 1905 from Bulletin 65, and the figures for 1906 from Bulletin 71; the figures for 1907 were obtained by computation from the data presented in Table I.

An illustration will best explain the method of computing relative numbers and the method of attaching one series of data to another by use of the relative number. Data were secured for the Nineteenth Annual Report from 212 establishments in the United States employing bricklayers in the building trades for each year from 1890

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to 1903. The following table shows the number of bricklayers employed each year in the 212 establishments and the relative numbers computed therefrom:

ACTUAL AND RELATIVE NUMBER OF BRICKLAYERS EMPLOYED IN 212 BUILDING ESTABLISHMENTS, 1890 TO 1903.

[From the Nineteenth Annual Report. Average number for 1890-1899=100.0.]

Year.	Number of employees.	Relative number of employees.
Average 1890-1899	4,355	100.0
1890	4,422	101.5
1891	4,892	112.3
1892	4,967	114.1
1893	4,535	104.1
1894	4,055	93.1
1895	3,841	88.2
1896	3,998	91.8
1897	4,010	92.1
1898	4,150	95.3
1899	4,675	107.3
1900	4,576	105.1
1901	5,142	118.1
1902	4,781	109.8
1903	5,062	116.2

The average number of persons employed for the ten years from 1890 to 1899 was first computed by adding the number of employees in the ten years and dividing by ten. This average number, 4,355, was adopted as a base or standard for comparison. The number of employees in the 212 establishments in 1890 was 4,422, which was found by computation to be 101.5 per cent of 4,355, the base number. Therefore the relative number of employees in 1890 was 101.5. The relative number was computed in like manner for each succeeding year. In looking down the two columns the reader will see that the relative numbers convey a clearer idea of the extent of the change in the number of employees from year to year in the establishments reporting than do the actual numbers themselves.

Data for bricklayers were secured for Bulletin 59 from 229 establishments for 1903 and 1904. As these establishments differed to some extent from those shown for the years 1890 to 1903 in the Nineteenth Annual Report, direct comparison can not properly be made between the number of employees in 1904 shown in Bulletin 59 and the number in 1903 reported from the 212 establishments in the Nineteenth Annual Report. For the establishments covered in Bulletin 59, however, comparison could be made between the number of persons employed in the two years as shown in Table I of that report. In the 229 establishments 4,853 bricklayers were employed in 1903 and 4,644 in 1904. The number employed in 1904 was 95.69 per cent of the number employed in 1903. As shown in the above text table, the relative number of employees in 1903 was 116.2 as compared with the average number from 1890 to 1899, and, as just stated, the number of employees in 1904 was 95.69 per cent of the number in 1903, therefore the relative number in 1904 in the series from 1890 to 1904 would be 95.69 per cent of 116.2, or 111.2. It

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must not be understood that the number of employees (4,644) in 1904 in the 229 establishments is 111.2 per cent of the average number (4,355) for the ten-year period, 1890 to 1899, in the 212 establishments, but that the relative figures in the series from 1890 to 1904, calculated as above, show conditions as to the number of bricklayers employed in the occupation generally so far as can be determined from the establishments investigated.

Data were secured for bricklayers for Bulletin 65 from 209 establishments for both 1904 and 1905, the greater number of which establishments furnished the data for 1904, which were published in Bulletin 59. The number of employees reported by these 209 establishments was 4,341 for 1904 and 4,365 for 1905; the number in 1905 was 100.55 per cent of the number in 1904. By applying this percentage to the relative number for 1904 (111.2) the relative number for 1905 is found to be 111.8. The relative numbers for 1906 and 1907 were computed in the same manner and the series for the full period of 18 years appears on page 66.

In using the relative numbers it should be borne in mind that the difference between the relative numbers in any two years does not represent the per cent of increase or decrease in the actual numbers. For example, the relative number of bricklayers in the building trades in 1890 was 101.5. The relative number in 1907 was 115.7. The difference in the relative numbers is 14.2. and this difference is 14.0 per cent of 101.5—that is, the number of bricklayers employed, so far as can be determined from the establishments covered, was 14.0 per cent greater in 1907 than in 1890.

The few new occupations incorporated in this report can not have relative numbers shown for them, because no data were secured for them in the years adopted as the base period.

Table III.—Relative wages and hours of labor, 1890 to 1907, by industries (pp. 126 to 132).—This table presents the relative numbers for each industry as a whole, in the same form as the relative numbers for each occupation are presented in Table II.

The table shows the trend of wages and hours of labor in the occupations of an industry taken as a whole. The average wages of all employees in an industry, irrespective of occupation, may differ to some extent, possibly, from the figures here shown, because of a change during the period in the proportionate number of employees in the several occupations. The table is intended to show changes as regards the same or like employees, rather than changes in which the establishment is considered as the unit.

Like Table II, Table III embraces three divisions, relating to the number of employees in the several years, the hours of work per week, and the wages per hour. The base on which the relative number is computed is the average for the ten-year period, 1890–1899. By reference to the table, page 126, it is seen that in 1890 the number of

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employees engaged in the agricultural implement industry was 86.2 per cent of the average number employed during the ten-year period, 1890 to 1899. In each of the years thereafter a greater number was employed than in 1890, the highest being in 1906, when 33.3 per cent more persons were employed in the occupations and establishments covered in this industry than the average during the base period. In 1906 the number employed was 30.5 per cent more than the average number employed during the ten-year base period. With this explanation, the other columns of the table relating to hours per week and wages per hour will be readily understood.

The method of computation originally employed in preparing this table was to add the relative numbers under each heading for all of the occupations of an industry and divide the sum by the number of occupations entering into the total. Changes in the industries from year to year, however, have required the dropping out of some occupations and the taking on of others. Because of such changes the method now followed in computing the relative numbers for the industry is to compute for employees, hours, and wages in each occupation shown in Table I the per cent which the figures of the current year are of the figures for the preceding year; the percentages for all the occupations in the industry are then added and the sum divided by the number of occupations. The index for the industry for the preceding year is then multiplied by this average percentage to determine the index or relative number for the year under consideration.

For example, the percentages of the wages per hour in 1907 as compared with the wages per hour in 1906 in each of the several occupations of the industry, liquors, malt, were as follows:

Bottlers' wages in 1907 were 112.96 per cent of wages in 1906.
Cellar men's wages in 1907 were 102.93 per cent of wages in 1906.
Coopers' wages in 1907 were 101.28 per cent of wages in 1906.
Drivers' wages in 1907 were 101.11 per cent of wages in 1906.
Fermenters' wages in 1907 were 102.39 per cent of wages in 1906.
Kettle men's wages in 1907 were 102.68 per cent of wages in 1906.
Malt house men's wages in 1907 were 104.88 per cent of wages in 1906.
Washers' wages in 1907 were 103.72 per cent of wages in 1906.
The total of these percentages is 831.95. Dividing by the number of occupations (8) the average is 103.99.

The relative wages per hour in the industry, liquors, malt, in 1906 were 127.8, and 103.99 per cent of this relative number is 132.9, which number thus represents the relative wages per hour of this industry as a whole in 1907.

In computing the relative numbers shown in Table III each occupation has been given an equal weight, because no satisfactory data are available by which to weight the several occupations. When both sexes were reported in an occupation, each sex was considered a separate occupation in the computation.

In computing the figures for the summary for the United States shown on page 7 each industry has been given a weight in proportion

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to the amount of wages paid therein, as shown by the United States census of 1900. This was deemed to be the most equitable method of making allowance for the greater or less importance of the several industries. The agricultural implement industry is an important industry, but by no means so great as the building industry of the country; therefore allowance for the importance of each industry was deemed necessary, and the most satisfactory method of weighting is believed to be the weighting in proportion to the wages paid in the several industries. In computing this weighted average the relative number or index for a year for each industry was multiplied by the wages paid in each industry, respectively, as shown by the United States census of 1900, expressed in the nearest $100,000. The products were then added and the sum divided by the total wages paid in the industries represented. When the industry classification differed from that given by the United States census, the wages paid were estimated from the census figures. Street and sewer work, not reported as such by the census, was estimated from the best available data—that is, the wages paid in the District of Columbia. When two or more industries shown separately in this report were classed as one industry by the census, the relative numbers for the several industries were added, and the totals divided by the number of subindustries to obtain a relative number for the general industry as shown by the census. The figures of the census of manufactures of 1905 can not be used satisfactorily as a new basis of weighting the several industries shown in this report because that census was limited to work done under the factory system and did not include the mechanical trades. The following table shows the relative weight accorded to each industry:

WEIGHT OF EACH INDUSTRY ACCORDING TO WAGES PAID.

[The weight given to each industry was determined by the wages paid, expressed in the nearest $100,000, as shown by the United States census of 1900.]

Industry.	Weight.	Industry.	Weight.
Agricultural implements	225	Hats, fur	[b] 151
Bakery, bread	279	Hosiery and knit goods	244
Blacksmithing and horseshoeing	180	Iron and steel	1,208
Boots and shoes	592	Leather	226
Brick	219	Liquors, malt	258
Building trades	[a] 2,127	Lumber	1,946
Candy	109	Marble and stone work	287
Carpets	111	Paper and wood pulp	207
Carriages and wagons	298	Planing mill	327
Cars, steam railroad	1,194	Pottery	177
Clothing	794	Printing and publishing	842
Cotton goods	867	Shipbuilding	248
Dyeing, finishing, and printing textiles	127	Silk goods	210
Electrical apparatus and supplies	202	Slaughtering and meat packing	339
Flour	177	Streets and sewers	[c] 395
Foundry and machine shop	1,822	Tobacco, cigars, and cigarettes	409
Furniture	426	Woolen and worsted goods	448
Gas	124		
Glass	271	Total	17,273
Harness	107		

[a] Including census figures for carpentering, masonry, plumbing, painting and paper hanging, and one-half of roofing, architectural iron, electrical construction, and tinsmithing.
[b] Including census figures for wool hats.
[c] Estimated from wages paid in the District of Columbia.

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In preparing the figures for the Nineteenth Annual Report, in order to ascertain the difference, if any, between the results obtained by the method adopted for the computation of the relative number or index for all industries and the results secured by other methods, the relative wages were computed by three other methods—first, by giving all occupations an equal weight; second, by giving each industry an equal weight; and, third, by giving each industry a weight in proportion to the number of employees engaged in the industry as shown by the census of 1900. The results obtained by the four different methods were very nearly the same, and any one of the three other methods might not improperly have been used.

Several industries of lesser importance shown in the Nineteenth Annual Report have not been continued. In order to determine what difference there would be in the relative numbers for all industries if computed only from the industries retained, relative numbers for the industries retained were computed for 1890 and 1903. It was found that the relative numbers for 1903 based on 42 industries were practically the same as those based on the 67 industries included in the Nineteenth Annual Report—the variation being not more than one-tenth of 1 per cent for employees, for hours, or for wages.

Table IV.—Average wages and hours of labor, 1906 and 1907, in selected occupations, by cities (pp. 133 to 162).—In this table the average wages and hours of labor of the most important general occupations are shown by cities. Like Table I, it comprises three divisions, relating to the number of employees covered, the average hours of work per week, and the average wages per hour, respectively. Cities in which data were secured from only one establishment have been omitted from this table to avoid identification and possible insufficient representation, except for the occupation of laborers on streets and sewers, employed directly by the cities.

The first occupation shown in Table IV (p. 133) is bakers. The first line relates to wages in Albany, N. Y., and shows that in the two establishments from which data for bakers were secured, 10 men were employed in 1906 and 10 in 1907, the average hours per week were 60 in 1906 and 60 in 1907, and the average wages per hour, $0.2300 in 1906 and $0.2383 in 1907.

Table V.—Average wages and hours of labor, 1906 and 1907, in selected occupations, by States (pp. 163 to 180).—In this table the average wages and hours of labor of certain important occupations are shown by States. The data are not presented by localities, as in many instances the identity of the establishments furnishing the data might be disclosed by such classification. The form of this table is like that of Table IV, and needs no explanation.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS.

AGRICULTURAL IMPLEMENTS.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Blacksmiths, male:							
North Atlantic	4	34	33	59.79	57.88	$0.2139	$0.2361
North Central	15	192	159	58.63	60.38	.2643	.2839
South Central	2	12	10	60.00	57.60	.2748	.2878
Western	2	14	26	54.00	54.00	.3607	.3686
United States	23	252	228	58.59	59.17	.2634	.2868
Blacksmiths, machine, male:							
North Atlantic	3	71	68	59.96	59.56	.2712	.2617
North Central	11	342	364	58.75	58.85	.3205	.3077
South Central	1	23	25	60.00	56.00	.3174	.2947
United States	15	436	457	59.01	58.80	.3123	.3001
Dippers, male:							
North Atlantic	4	35	36	59.94	59.44	.2128	.2228
North Central	11	186	191	58.64	58.69	.2538	.2449
South Central	1	6	3	60.00	56.00	.2684	.3607
United States	16	227	230	58.88	58.77	.2478	.2429
Fitters, male:							
North Atlantic	4	282	167	59.29	59.10	.2177	.2211
North Central	14	769	751	58.40	58.38	.2536	.2589
South Central	2	25	21	60.00	56.95	.2921	.2810
United States	20	1,076	939	58.67	58.48	.2451	.2527
Grinders, male:							
North Atlantic	4	68	55	58.68	58.73	.2297	.2550
North Central	13	386	403	58.87	58.91	.2985	.2956
South Central	2	35	28	60.00	56.71	.2879	.2802
Western	1	4	4	54.00	54.00	.2500	.2778
United States	20	493	490	58.88	58.72	.2879	.2900
Machine woodworkers, male:							
North Atlantic	4	89	75	58.76	58.80	.2028	.2114
North Central	14	353	348	58.57	58.64	.2494	.2457
South Central	2	25	22	60.00	56.55	.2380	.2453
Western	2	10	13	54.00	54.00	.3277	.3440
United States	22	477	458	58.59	58.43	.2417	.2428
Machinists, male:							
North Atlantic	4	109	117	59.85	58.97	.2335	.2485
North Central	13	481	499	57.94	57.78	.2751	.2746
South Central	1	5	4	60.00	56.00	.2900	.3000
Western	2	57	41	54.00	54.00	.3347	.3746
United States	20	652	661	57.93	57.74	.2735	.2764
Molders, iron, male:							
North Atlantic	4	238	198	59.87	59.09	.2614	.2781
North Central	12	724	759	57.99	58.05	.2930	.2818
South Central	2	10	9	60.00	59.56	.2983	.3101
Western	2	16	23	54.00	54.00	.4026	.4420
United States	20	988	989	58 40	58.18	.2872	.2850
Molders, iron, machine, male:							
North Atlantic	2	101	103	60.00	60.00	.2452	.2439
North Central	5	834	921	58.39	58.39	.2388	.2432
South Central	1	34	36	60.00	56.00	.3241	.3136
United States	8	969	1,060	58.61	58.47	.2425	.2456
Painters, male:							
North Atlantic	4	37	20	59.86	57.50	.2412	.2364
North Central	15	318	261	58.36	58.41	.2667	.2753
South Central	2	25	22	60.00	56.55	.3225	.3146
Western	2	5	5	54.00	54.00	.3385	.3722
United States	23	385	308	58.36	58.14	.2688	.2771

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

AGRICULTURAL IMPLEMENTS—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Pattern makers, metal, male:							
North Atlantic	4	23	23	59.87	58.70	$0.2437	$0.2502
North Central	11	94	94	58.34	58.50	.2746	.2804
South Central	1	5	9	60.00	56.00	.2650	.2406
United States	16	122	126	58.70	58.36	.2684	.2720
Pattern makers, wood, male:							
North Atlantic	4	16	16	59.75	58.13	.2741	.2756
North Central	15	48	50	57.81	57.78	.3065	.3106
Western	2	4	3	54.00	54.00	.4583	.5371
United States	21	68	69	58.04	57.70	.3078	.3123

BAKERY, BREAD.

Bakers, male:							
North Atlantic	48	1,112	1,139	61.18	61.32	$0.2507	$0.2513
South Atlantic	21	206	232	60.00	59.44	.2399	.2454
North Central	45	729	735	57.48	57.61	.2572	.2589
South Central	22	145	145	67.49	66.39	.2100	.2177
Western	17	203	206	59.59	58.51	.3280	.3478
United States	153	2,395	2,457	60.20	60.09	.2558	.2589

BLACKSMITHING AND HORSESHOEING.

Blacksmiths, male:							
North Atlantic	11	33	32	58.03	56.78	$0.2691	$0.2809
South Atlantic	3	8	8	57.25	57.25	.2500	.2500
North Central	9	20	19	58.35	58.32	.2839	.2754
South Central	3	7	8	59.14	59.25	.2790	.3904
Western	5	23	25	52.17	52.04	.4037	.4657
United States	31	91	92	56.64	56.07	.3055	.3290
Horseshoers, floor men, male:							
North Atlantic	42	114	119	53.75	53.46	.3130	.3297
South Atlantic	17	42	41	55.24	55.12	.2790	.2876
North Central	47	128	126	54.42	54.33	.3215	.3345
South Central	18	32	29	54.41	54.31	.2701	.2896
Western	17	35	35	53.03	53.00	.4052	.4289
United States	141	351	350	54.16	53.99	.3173	.3331
Horseshoers, forgemen, male: (a)							
North Atlantic	41	99	97	53.76	53.51	.3580	.3684
South Atlantic	17	29	29	55.52	55.52	.3225	.3249
North Central	43	91	91	54.81	54.57	.3652	.3813
South Central	18	28	27	54.71	54.30	.3326	.3496
Western	16	23	23	53.00	53.00	.4492	.4728
United States	135	270	267	54.34	54.12	.3618	.3751

BOOTS AND SHOES.

Closers-on, female:							
North Atlantic	31	180	193	56.04	54.56	$0.1888	$0.1898
North Central	15	113	126	57.82	57.83	.1878	.1914
United States	46	293	319	56.73	55.85	.1884	.1905

a Including fitters.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

BOOTS AND SHOES—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Cutters, outsole, male:							
North Atlantic	25	109	104	56.91	56.70	$0.2602	$0.2680
North Central	13	61	69	58.16	58.39	.2507	.2537
United States	38	170	173	57.36	57.38	.2568	.2623
Cutters, upper, male:							
North Atlantic	32	1,201	1,066	55.82	55.72	.2867	.3066
North Central	15	561	610	57.71	57.21	.2878	.3058
United States	47	1,762	1,676	56.42	56.26	.2870	.3063
Edge trimmers, male:							
North Atlantic	31	304	272	55.66	55.82	.3730	.3957
North Central	15	118	123	57.85	57.57	.3767	.4088
United States	46	422	395	56.27	56.37	.3740	.3998
Goodyear stitchers, male:							
North Atlantic	26	209	208	55.25	55.34	.3897	.3850
North Central	15	105	104	57.72	57.13	.3730	.4193
United States	41	314	312	56.08	55.94	.3841	.3964
Heel trimmers, male:							
North Atlantic	30	104	96	55.91	55.63	.4061	.4079
North Central	15	46	46	57.17	57.15	.3878	.4060
United States	45	150	142	56.30	56.12	.4005	.4073
Lasters, machine, male:							
North Atlantic	31	575	586	56.83	56.10	.3037	.3097
North Central	15	387	423	56.90	56.49	.3202	.3267
United States	46	962	1,009	56.86	56.27	.3103	.3168
McKay stitchers, male:							
North Atlantic	25	83	77	56.37	55.96	.3004	.2936
North Central	8	20	20	59.20	59.20	.3157	.2942
United States	33	103	97	56.92	56.63	.3034	.2938
Treers, male:							
North Atlantic	22	493	439	55.46	55.69	.2437	.2734
North Central	13	134	155	57.23	56.87	.2608	.2775
United States	35	627	594	55.84	56.00	.2474	.2744
Vampers, male:							
North Atlantic	16	113	120	55.09	55.28	.3122	.3102
North Central	5	19	33	56.47	56.24	.2948	.3153
United States	21	132	153	55.29	55.49	.3097	.3113
Vampers, female:							
North Atlantic	31	425	343	56.09	55.70	.2410	.2473
North Central	15	270	250	57.81	57.64	.2123	.2242
United States	46	695	593	56.76	56.52	.2299	.2375

BRICK.

Brick-machine tenders, male:							
North Atlantic	16	150	143	50.18	50.08	$0.2210	$0.2263
South Atlantic	7	68	69	59.47	59.48	.1660	.1673
North Central	15	57	55	55.37	55.20	.2403	.2504
South Central	7	73	49	59.63	59.45	.1592	.1687
Western	7	11	11	51.82	51.64	.2962	.3045
United States	52	359	327	54.74	54.38	.2034	.2119

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

BRICK—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Grinding-machine tenders, male:							
North Atlantic	3	8	9	50.25	51.00	$0.2019	$0.1950
South Atlantic	4	8	8	60.00	60.00	.1719	.1719
North Central	6	14	16	54.00	54.75	.2265	.2248
Western	2	5	5	54.00	54.00	.2333	.2333
United States	15	35	38	54.51	54.87	.2094	.2077
Kiln firemen, male: (a)							
North Atlantic	16	64	64	81.31	80.88	.1664	.1706
South Atlantic	8	56	51	80.39	80.59	.1410	.1451
North Central	15	86	84	84.00	84.00	.1909	.1977
South Central	8	65	58	74.68	72.93	.1284	.1378
Western	7	21	21	70.67	70.67	.2932	.3095
United States	54	292	278	79.68	79.34	.1694	.1777
Kiln setters, male:							
North Atlantic	16	66	68	58.36	58.24	.2133	.2271
South Atlantic	6	28	26	57.64	57.46	.2278	.2234
North Central	14	69	67	56.00	55.88	.2960	.3049
South Central	8	37	30	60.59	60.93	.2198	.2064
Western	7	21	23	48.86	49.04	.3775	.3910
United States	51	221	214	57.00	56.79	.2577	.2657
Laborers, male:							
North Atlantic	16	391	398	58.89	58.92	.1579	.1621
South Atlantic	8	329	331	59.34	59.35	.1483	.1530
North Central	15	365	364	57.16	57.15	.2152	.2216
South Central	8	291	271	60.16	60.20	.1515	.1522
Western	7	142	142	52.84	52.56	.2817	.2913
United States	54	1,518	1,506	58.25	58.22	.1800	.1849
Offbearers, male:							
North Atlantic	10	89	91	53.66	53.80	.1765	.1818
South Atlantic	6	55	48	52.58	51.88	.1701	.1705
North Central	13	105	109	52.17	52.35	.2428	.2544
South Central	7	42	38	59.95	59.95	.1371	.1413
Western	5	20	20	49.35	49.35	.2847	.2825
United States	41	311	306	53.54	53.45	.1994	.2074

BUILDING TRADES.

Bricklayers, male:							
North Atlantic	73	1,994	1,928	45.65	45.67	$0.6103	$0.6148
South Atlantic	32	626	496	49.08	48.70	.5754	.5763
North Central	69	1,770	1,591	46.73	46.90	.6105	.6215
South Central	27	397	419	49.63	49.16	.6026	.6279
Western	21	378	385	44.93	44.80	.8203	.8286
United States	222	5,165	4,819	46.69	46.62	.6209	.6313
Carpenters, male:							
North Atlantic	74	2,788	3,020	47.04	46.62	.4205	.4575
South Atlantic	33	998	1,057	49.42	49.29	.3605	.3762
North Central	69	2,161	2,115	48.54	48.07	.3964	.4193
South Central	29	632	640	53.47	52.64	.3205	.3460
Western	20	626	554	46.24	45.71	.5143	.5711
United States	225	7,205	7,386	48.31	47.87	.4043	.4338

(a) Attend the fires in the kiln. Reported as kiln burners in the Nineteenth Annual Report of this Bureau and in Bulletins 59, 65, and 71.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

BUILDING TRADES—Continued.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Cornice makers, male:							
North Atlantic	25	418	410	47.03	46.31	$0.4392	$0.4468
South Atlantic	11	109	106	49.06	48.94	.3984	.4049
North Central	33	340	331	48.77	49.13	.4098	.4273
South Central	10	96	113	50.19	50.27	.3584	.3717
Western	8	75	93	45.47	44.98	.5984	.6373
United States	87	1,038	1,053	47.99	47.77	.4293	.4452
Gas fitters, male:							
North Atlantic	17	67	63	46.18	46.22	.4881	.5029
South Atlantic	7	35	33	49.14	49.36	.3853	.3807
North Central	30	82	94	46.73	47.01	.4831	.5177
South Central	10	31	31	47.90	47.90	.4627	.4637
Western	13	41	36	44.29	44.44	.7454	.7813
United States	77	256	257	46.67	46.87	.5106	.5269
Hod carriers, male: (a)							
North Atlantic	94	2,487	2,207	45.98	46.14	.3258	.3230
South Atlantic	38	657	528	48.81	48.65	.2455	.2489
North Central	105	2,718	2,494	47.25	47.16	.3142	.3152
South Central	31	405	374	51.75	50.53	.2063	.2297
Western	43	535	493	45.10	44.69	.4624	.4788
United States	311	6,802	6,096	47.03	46.92	.3170	.3202
Inside wire men, male:							
North Atlantic	28	589	578	46.59	46.47	.4227	.4253
South Atlantic	17	249	241	50.81	50.50	.3633	.3785
North Central	34	459	478	48.42	48.02	.3940	.4193
South Central	13	105	100	52.91	51.42	.3140	.3444
Western	9	130	126	47.14	46.60	.4488	.4658
United States	101	1,532	1,523	48.30	47.93	.3992	.4140
Laborers, male:							
North Atlantic	57	2,555	2,597	54.85	53.57	.1878	.1990
South Atlantic	29	975	727	54.82	54.33	.1482	.1602
North Central	61	2,477	3,007	55.50	55.98	.2176	.2170
South Central	27	558	717	55.82	54.82	.1596	.1702
Western	16	389	318	49.01	49.11	.2878	.2911
United States	190	6,954	7,366	54.83	54.56	.1962	.2037
Lathers, metal, male:							
North Atlantic	6	126	96	44.32	44.38	.4949	.4955
North Central	6	55	55	45.00	45.15	.5344	.5513
South Central	2	17	14	44.00	44.00	.5000	.5000
Western	7	80	92	44.90	44.30	.6930	.7425
United States	21	278	257	44.60	44.49	.5600	.5961
Lathers, wood, male:							
North Atlantic	10	80	70	45.25	45.20	.4449	.4534
South Atlantic	9	37	37	47.46	47.68	.3824	.3678
North Central	21	174	178	47.78	47.90	.4426	.4483
South Central	8	50	61	49.20	48.98	.4296	.4207
Western	8	165	155	45.09	44.46	.7911	.7526
United States	56	506	501	46.62	46.57	.5509	.5338
Painters, male:							
North Atlantic	66	1,690	1,643	47.47	46.98	.3722	.3867
South Atlantic	31	544	547	49.47	49.37	.3455	.3584
North Central	65	1,528	1,498	47.46	47.44	.3854	.4006
South Central	24	409	436	48.89	48.89	.3420	.3551
Western	25	396	373	45.36	45.05	.5092	.5298
United States	211	4,566	4,497	47.65	47.45	.3823	.3967

(a) Including men who mix mortar and wait on bricklayers, plasterers, and stone masons, whether or not a hod is used.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

BUILDING TRADES—Continued.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Paper hangers, male:							
North Atlantic	37	320	322	48.49	47.99	$0.4280	$0.4437
South Atlantic	14	152	137	50.28	49.80	.3989	.4099
North Central	35	252	249	48.54	49.68	.4021	.4186
South Central	12	93	96	49.61	49.44	.3733	.3879
Western	18	134	123	45.58	45.56	.5111	.5492
United States	116	951	927	48.49	48.54	.4224	.4402
Plasterers, male:							
North Atlantic	49	835	835	45.26	45.21	.5990	.6077
South Atlantic	26	357	389	49.29	49.22	.5424	.5517
North Central	52	687	766	46.19	45.82	.6006	.6219
South Central	21	163	179	49.48	49.01	.5490	.5600
Western	18	235	245	45.55	44.93	.7511	.7855
United States	166	2,277	2,414	46.52	46.30	.5991	.6177
Plumbers, male:							
North Atlantic	72	848	818	46.17	46.16	.5085	.5224
South Atlantic	31	244	247	49.10	49.24	.4732	.4848
North Central	67	690	656	46.71	46.38	.5129	.5438
South Central	28	222	248	47.75	47.77	.5072	.5371
Western	21	312	296	44.86	44.43	.7376	.7677
United States	219	2,316	2,265	46.62	46.51	.5850	.5582
Roofers, gravel and tar, male:							
North Atlantic	26	307	322	50.91	50.68	.2810	.2905
South Atlantic	8	55	61	54.64	54.18	.2267	.2324
North Central	27	301	282	52.27	51.59	.3509	.3535
South Central	9	139	139	56.33	56.24	.1718	.1746
Western	11	99	119	47.92	47.36	.4336	.4581
United States	81	901	923	52.10	51.69	.3008	.3100
Roofers, slate and tile, male:							
North Atlantic	26	130	120	49.08	49.10	.3900	.3946
South Atlantic	10	64	75	50.63	48.73	.4048	.4285
North Central	25	102	92	49.06	48.40	.4078	.4030
South Central	6	37	35	48.97	49.03	.3683	.3847
Western	3	16	12	46.00	46.33	.6094	.6146
United States	70	349	334	49.20	48.72	.4057	.4114
Roofers, tin, male:							
North Atlantic	40	321	337	47.10	46.99	.4170	.4297
South Atlantic	23	160	154	50.09	49.71	.3433	.3443
North Central	35	314	359	49.87	49.46	.3808	.3685
South Central	15	124	129	49.27	49.20	.3864	.3838
Western	5	58	29	45.31	44.69	.6412	.6272
United States	118	977	1,008	48.65	48.50	.3905	.3947
Steamfitters, male:							
North Atlantic	43	431	434	46.91	47.07	.4751	.4820
South Atlantic	11	81	75	49.26	49.00	.4540	.4507
North Central	50	393	374	47.36	47.02	.4957	.5170
South Central	10	67	52	47.78	47.65	.4992	.5065
Western	15	87	81	44.69	44.94	.7076	.7244
United States	129	1,059	1,016	47.13	47.06	.4997	.5133
Stone masons, male:							
North Atlantic	40	334	290	47.49	47.34	.4773	.4931
South Atlantic	9	96	69	51.98	51.17	.4570	.4583
North Central	32	259	246	48.07	47.63	.5264	.5404
South Central	6	35	35	49.46	49.46	.4629	.4743
Western	11	109	95	44.77	44.84	.6147	.6388
United States	98	833	735	47.91	47.57	.5087	.5256

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

BUILDING TRADES—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Stone setters, male:							
North Atlantic	18	104	103	46.48	46.70	$0.5289	$0.5195
South Atlantic	14	45	37	49.84	48.95	.5384	.5543
North Central	15	57	63	47.44	46.97	.5421	.5493
South Central	7	24	31	49.96	48.29	.5044	.5913
Western	3	13	12	44.92	44.67	.6154	.6323
United States	57	243	246	47.59	47.21	.5338	.5469
Structural iron workers, male:(a)							
North Atlantic	20	940	663	45.57	45.94	.4782	.5283
South Atlantic	6	115	108	49.20	49.94	.4963	.4435
North Central	24	828	900	52.53	51.17	.4320	.4565
South Central	4	51	60	55.12	56.62	.3240	.3358
Western	8	142	183	51.15	50.05	.4963	.4550
United States	62	2,076	1,914	49.16	49.35	.4518	.4767

CANDY.

Candy makers, male:							
North Atlantic	13	192	207	57.94	57.93	$0.2601	$0.2632
South Atlantic	5	58	60	59.17	59.20	.2389	.2248
North Central	14	316	336	59.79	59.80	.2598	.2641
South Central	8	72	65	58.00	57.89	.2683	.2795
Western	4	19	25	55.89	55.36	.3480	.3489
United States	44	657	693	58.89	58.85	.2608	.2649
Dippers, female:							
North Atlantic	12	383	429	55.19	55.29	.1196	.1237
South Atlantic	5	47	51	59.19	59.08	.0903	.0908
North Central	11	522	608	59.22	58.61	.0989	.1099
South Central	8	82	74	58.35	58.68	.0786	.0878
Western	4	71	80	56.61	56.46	.1176	.1252
United States	40	1,105	1,242	57.59	57.35	.1054	.1135

CARPETS.

Burlers, female:							
North Atlantic	7	141	161	59.02	58.87	$0.1434	$0.1467
Dyers, male:							
North Atlantic	6	169	202	58.86	58.49	.1586	.1623
Loom fixers, male:							
North Atlantic	7	61	56	58.98	59.11	.2777	.2817
Spoolers, female:							
North Atlantic	7	115	122	58.68	58.62	.1285	.1311
Twisters, female:							
North Atlantic	6	142	174	58.48	58.53	.1116	.1239
Weavers, brussels and wilton, male:							
North Atlantic	4	399	439	58.29	58.24	.3004	.3048
Weavers, ingrain, male:							
North Atlantic	3	57	51	59.75	59.88	.1593	.1575
Weavers, ingrain, female:							
North Atlantic	4	240	174	57.16	59.46	.1557	.1501
Winders, female:							
North Atlantic	7	217	167	58.47	58.59	.1250	.1378

a Work both on buildings and bridges.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

CARRIAGES AND WAGONS.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Blacksmiths, male:							
North Atlantic	24	192	185	56.15	56.37	$0.2925	$0.2883
South Atlantic	10	41	35	59.12	58.06	.2149	.2333
North Central	27	337	366	58.04	57.58	.2592	.2651
South Central	7	54	54	59.57	58.94	.2185	.2281
United States	68	624	640	57.66	57.37	.2630	.2669
Body makers, carriage, male:							
North Atlantic	21	331	334	54.95	54.95	.3081	.3137
South Atlantic	4	19	19	58.95	56.53	.2488	.2577
North Central	20	230	258	58.31	57.64	.2579	.2711
South Central	3	31	34	59.87	58.91	.1965	.1944
United States	48	611	645	56.59	56.28	.2817	.2887
Ironers, male:							
North Atlantic	9	165	149	54.89	55.20	.2520	.2493
South Atlantic	5	30	26	57.50	55.27	.2040	.1975
North Central	17	219	218	58.28	58.16	.2147	.2229
South Central	4	40	42	58.95	58.76	.2055	.1897
United States	35	454	435	57.06	57.03	.2268	.2272
Machine woodworkers, male:							
North Atlantic	8	84	80	58.46	58.51	.2289	.2291
South Atlantic	3	23	23	57.00	56.65	.2171	.2268
North Central	17	446	500	57.79	57.40	.1957	.2032
South Central	3	52	57	59.94	59.49	.1683	.1710
United States	31	605	660	58.04	57.69	.1988	.2044
Painters, male:							
North Atlantic	26	474	453	55.76	55.73	.2548	.2636
South Atlantic	10	84	82	58.54	57.60	.1989	.1999
North Central	28	996	990	58.22	57.83	.2589	.2730
South Central	7	83	81	59.59	59.06	.2419	.2337
United States	71	1,637	1,606	57.60	57.29	.2537	.2646
Trimmers, carriage, male:							
North Atlantic	20	171	149	55.98	56.25	.2861	.2885
South Atlantic	8	32	31	58.75	58.23	.2351	.2528
North Central	23	250	265	58.82	57.77	.2662	.2778
South Central	3	28	25	60.00	59.32	.2562	.2606
United States	54	481	470	57.87	57.40	.2706	.2786
Woodworkers, male:(a)							
North Atlantic	12	46	43	56.13	55.95	.2783	.2881
South Atlantic	6	15	12	59.60	58.50	.1812	.1982
North Central	11	111	102	57.57	57.06	.2119	.2077
South Central	5	23	25	59.22	58.68	.2125	.2205
United States	34	195	182	57.58	57.12	.2253	.2278

CARS, STEAM RAILROAD.

Blacksmiths, male:							
North Atlantic	6	187	166	56.05	56.13	$0.2968	$0.3267
South Atlantic	6	145	165	56.00	55.68	.2758	.3038
North Central	23	625	632	55.92	55.69	.3156	.3337
South Central	7	180	162	59.81	58.08	.2994	.3285
Western	4	215	217	54.00	54.00	.3461	.3751
United States	46	1,352	1,342	56.16	55.76	.3114	.3352

(a) Work with hand tools and are often called wheelwrights.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

CARS, STEAM RAILROAD—Continued.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Boiler makers, male:							
North Atlantic	2	83	83	56.24	56.17	$0.2775	$0.3051
South Atlantic	4	116	117	55.94	55.82	.2658	.2820
North Central	18	522	542	57.24	56.74	.3315	.3523
South Central	6	174	218	59.83	59.13	.3078	.3242
Western	3	200	190	54.00	54.00	.3629	.3863
United States	33	1,095	1,150	56.85	56.61	.3224	.3420
Brass finishers, male:							
North Atlantic	2	12	11	53.17	53.18	.2400	.2638
South Atlantic	1	20	15	55.00	55.00	.2738	.2973
North Central	8	201	164	54.69	54.82	.3069	.3174
United States	11	233	190	54.64	54.74	.3006	.3127
Cabinet makers, male:							
North Atlantic	3	185	152	54.29	54.39	.3108	.3372
South Atlantic	4	88	75	54.31	54.28	.2404	.2800
North Central	11	591	614	55.36	55.26	.3270	.3304
South Central	2	43	50	60.00	60.00	.2612	.2846
Western	1	29	34	54.00	54.00	.3164	.3507
United States	21	936	925	55.22	55.25	.3123	.3257
Carpenters, male:							
North Atlantic	6	1,153	1,149	55.67	55.85	.2787	.2842
South Atlantic	7	600	527	55.93	55.88	.2246	.2514
North Central	23	3,159	3,664	56.57	56.62	.2913	.3016
South Central	7	526	516	59.31	59.22	.2420	.2550
Western	4	122	116	54.00	54.00	.2936	.2972
United States	47	5,560	5,972	56.52	56.58	.2769	.2897
Car repairers, male:							
North Atlantic	5	760	857	54.93	55.67	.2886	.2641
South Atlantic	5	863	922	56.41	56.40	.1817	.1864
North Central	17	1,745	1,944	56.44	56.53	.2206	.2256
South Central	6	954	991	59.73	59.50	.1998	.2169
Western	3	792	966	54.00	54.00	.2500	.2675
United States	36	5,114	5,680	56.45	56.47	.2248	.2307
Laborers, male:							
North Atlantic	6	1,305	1,264	56.55	57.15	.1414	.1492
South Atlantic	7	694	741	56.82	56.38	.1324	.1383
North Central	23	5,015	5,811	55.89	55.76	.1613	.1649
South Central	7	1,170	1,491	59.83	59.88	.1422	.1472
Western	4	630	450	54.00	54.00	.1922	.1874
United States	47	8,814	9,757	56.45	56.54	.1557	.1592
Machine woodworkers, male:							
North Atlantic	6	171	177	55.70	55.94	.2665	.2834
South Atlantic	7	154	175	55.28	55.27	.2409	.2561
North Central	21	753	797	55.99	56.17	.2553	.2633
South Central	7	93	91	59.05	59.30	.2398	.2539
Western	2	16	10	54.00	54.00	.3213	.3287
United States	43	1,187	1,250	56.07	56.22	.2547	.2650
Machinists, male:							
North Atlantic	6	249	266	57.58	57.94	.2584	.2691
South Atlantic	7	637	609	56.25	56.25	.2838	.3020
North Central	23	2,259	2,431	56.18	55.51	.3239	.3433
South Central	7	713	841	59.06	59.31	.3061	.3298
Western	4	618	622	54.00	54.00	.3554	.3756
United States	47	4,476	4,769	56.43	56.21	.3161	.3357
Molders, brass, male:							
South Atlantic	2	17	12	56.47	56.25	.2794	.2975
North Central	10	83	60	54.90	55.23	.3257	.3267
South Central	3	19	12	58.63	60.00	.2958	.3286
United States	15	119	84	55.72	56.06	.3143	.3228

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

CARS, STEAM RAILROAD—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Molders, iron, male:							
North Atlantic	3	202	213	60.00	60.00	$0.3925	$0.4513
South Atlantic	2	64	61	56.88	56.56	.3813	.3185
North Central	4	184	218	57.70	57.38	.3218	.3325
South Central	3	70	61	60.00	58.92	.2934	.3028
United States	12	520	553	58.80	58.47	.3429	.3734
Painters, male:							
North Atlantic	6	485	443	55.05	54.89	.3082	.3262
South Atlantic	7	271	299	55.66	55.45	.2435	.2448
North Central	23	906	950	56.14	56.05	.2820	.2842
South Central	6	182	209	59.39	59.33	.2253	.2359
Western	4	135	154	54.00	54.00	.2851	.3002
United States	46	1,979	2,055	55.96	55.89	.2782	.2846
Pattern makers, wood, male:							
North Atlantic	5	45	49	59.73	59.76	.2934	.3222
South Atlantic	5	28	23	56.64	56.17	.2888	.3129
North Central	17	65	80	55.94	56.44	.3168	.3278
South Central	6	22	21	58.82	59.71	.3239	.3390
Western	3	20	19	54.00	54.00	.3742	.3963
United States	36	180	192	57.13	57.37	.3139	.3326
Pipe fitters, male:							
North Atlantic	6	112	113	56.36	56.46	.2718	.2795
South Atlantic	6	114	112	54.94	54.84	.2706	.2753
North Central	21	311	384	56.43	55.94	.3025	.3189
South Central	5	59	69	59.37	59.09	.2613	.2794
Western	3	127	143	54.00	54.00	.3009	.3209
United States	41	723	821	56.00	55.79	.2891	.3046
Tinsmiths, male:							
North Atlantic	5	88	83	54.38	54.55	.2988	.3215
South Atlantic	7	129	123	55.50	55.28	.2557	.2769
North Central	22	396	452	55.56	55.46	.3170	.3326
South Central	6	74	65	59.18	59.42	.2619	.2838
Western	3	97	106	54.00	54.00	.3255	.3435
United States	43	784	829	55.56	55.47	.3019	.3208
Upholsterers, male:							
North Atlantic	4	73	64	53.97	54.02	.2908	.3100
South Atlantic	7	46	38	55.59	55.63	.2381	.2448
North Central	14	193	212	55.33	55.35	.3147	.3303
South Central	5	16	17	58.00	59.65	.2781	.2962
Western	3	34	33	54.00	54.00	.3004	.3252
United States	33	362	364	55.08	55.22	.2972	.3158

CLOTHING, FACTORY PRODUCT.

Buttonhole makers, machine, male:							
North Atlantic	4	12	12	56.25	56.75	$0.2469	$0.2450
South Atlantic	3	24	20	55.54	55.70	.2641	.2487
United States	7	36	32	55.78	56.09	.2583	.2473
Buttonhole makers, machine, female:							
North Atlantic	3	12	8	53.50	53.38	.1282	.1428
South Atlantic	3	10	13	53.10	53.77	.1088	.1271
North Central	4	26	30	54.27	54.43	.1692	.1350
South Central	4	18	12	55.22	56.00	.1217	.1212
United States	14	66	63	54.21	54.46	.1467	.1317

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

CLOTHING, FACTORY PRODUCT—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Cutters, hand, male:							
North Atlantic	15	484	468	52.10	52.51	$0.3672	$0.3697
South Atlantic	2	78	73	53.77	53.62	.3192	.3203
North Central	9	293	286	48.61	48.63	.4131	.4326
South Central	3	14	14	57.14	57.14	.2255	.2380
United States	29	869	841	51.15	51.37	.3761	.3846
Cutters, machine, male:							
North Atlantic	11	25	24	50.00	50.54	.4267	.4300
South Atlantic	4	38	37	54.18	54.35	.3616	.3757
North Central	8	170	215	48.07	48.99	.4362	.4262
United States	23	233	276	49.27	49.14	.4244	.4198
Examiners, male:							
North Atlantic	13	78	70	52.08	52.84	.2856	.2904
South Atlantic	4	27	33	53.74	56.15	.2388	.2358
North Central	10	59	67	50.95	50.51	.3247	.3217
United States	27	164	170	51.95	52.56	.2921	.2921
Examiners, female:							
North Atlantic	3	14	15	53.57	52.93	.1447	.1468
South Central	3	14	13	55.14	55.38	.1159	.1195
United States	6	28	28	54.36	54.07	.1303	.1341
Finishers, female:							
North Atlantic	11	294	325	55.13	54.88	.1161	.1301
South Atlantic	5	245	205	57.88	56.78	.1155	.1278
North Central	6	276	290	54.00	54.00	.1346	.1377
South Central	4	93	125	56.14	55.91	.1015	.1051
United States	26	908	945	55.63	55.16	.1201	.1286
Pressers, male:							
North Atlantic	14	401	382	53.87	54.06	.2152	.2285
South Atlantic	5	142	142	59.25	56.96	.2116	.2149
North Central	7	209	284	54.08	54.96	.2676	.2675
South Central	4	39	45	56.95	56.76	.2071	.1975
United States	30	791	833	55.04	54.70	.2280	.2369
Sewing machine operators, male:							
North Atlantic	14	615	617	54.94	55.12	.2188	.2243
South Atlantic	4	126	129	58.71	55.98	.2579	.2349
North Central	4	56	76	54.02	54.03	.3103	.3161
South Central	2	10	12	57.50	56.75	.2791	.2809
United States	24	807	834	55.50	55.16	.2320	.2351
Sewing machine operators, female:							
North Atlantic	11	688	687	53.75	53.70	.1330	.1378
South Atlantic	4	247	268	56.26	56.63	.1373	.1407
North Central	6	215	220	54.10	54.09	.1939	.1885
South Central	4	323	250	54.59	54.95	.1302	.1317
United States	25	1,473	1,435	54.41	54.53	.1420	.1454

COTTON GOODS.

Carding machine tenders, male:							
North Atlantic	15	356	350	59.20	58.62	$0.1242	$0.1383
South Atlantic	14	143	140	65.38	63.51	.0875	.1046
South Central	5	65	81	62.35	62.17	.1053	.1115
United States	34	564	571	61.25	60.47	.1127	.1263
Dyers, male:							
North Atlantic	3	355	375	60.69	58.27	.1413	.1549
South Atlantic	6	63	68	64.73	62.79	.0966	.1124
United States	9	418	443	60.71	58.96	.1346	.1484

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

COTTON GOODS—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Loom fixers, male:							
North Atlantic	15	665	672	59.27	58.10	$0.2171	$0.2448
South Atlantic	13	160	160	65.27	63.39	.1434	.1560
South Central	5	68	75	64.32	64.51	.1642	.1683
United States	33	893	907	60.73	59.56	.1999	.2228
Spinners, frame, male:							
North Atlantic	8	134	172	58.82	58.29	.1199	.1333
South Atlantic	6	68	70	65.82	64.16	.0899	.0909
United States	14	202	242	61.18	59.99	.1098	.1210
Spinners, frame, female:							
North Atlantic	15	2,302	2,352	59.05	58.38	.1120	.1290
South Atlantic	14	724	711	65.59	63.50	.0761	.0904
South Central	5	318	382	64.27	64.31	.0668	.0710
United States	34	3,344	3,445	60.96	60.09	.0999	.1146
Spinners, mule, male:							
North Atlantic	10	299	300	59.37	59.07	.1978	.2328
Weavers, male:							
North Atlantic	14	1,959	2,078	58.48	58.55	.1698	.1940
South Atlantic	13	857	788	65.56	63.54	.1117	.1270
South Central	5	170	179	65.00	64.82	.1105	.1127
United States	32	2,986	3,045	60.89	60.21	.1498	.1719
Weavers, female:							
North Atlantic	14	3,625	3,532	58.85	58.67	.1483	.1668
South Atlantic	13	691	692	65.76	63.44	.0956	.1129
South Central	5	338	360	62.89	62.98	.0950	.0955
United States	32	4,654	4,584	60.17	59.73	.1366	.1531

DYEING, FINISHING, AND PRINTING TEXTILES.

Bleachers, male:							
North Atlantic	14	422	402	58.47	58.36	$0.1282	$0.1368
Calendrers, male:							
North Atlantic	15	310	338	59.02	58.85	.1435	.1472
Color mixers, male:							
North Atlantic	9	126	117	58.98	58.74	.1333	.1417
Dyers, male:							
North Atlantic	17	485	536	58.66	58.53	.1460	.1501
Engravers, male:							
North Atlantic	8	90	93	57.72	56.86	.4534	.4520
Printers, male:							
North Atlantic	10	100	100	58.20	58.27	.4476	.4477

ELECTRICAL APPARATUS AND SUPPLIES.

Armature winders, male:							
North Atlantic	5	416	463	55.17	54.70	$0.3218	$0.3336
North Central	3	108	116	51.67	51.92	.2184	.2200
United States	8	524	579	54.45	54.15	.3005	.3108
Brass finishers, male:							
North Atlantic	4	90	84	54.78	54.80	.3575	.3615
North Central	2	52	85	53.94	53.96	.2422	.2437
United States	6	142	169	54.47	54.38	.3153	.3023
Incandescent lamp makers, female: (a)							
North Atlantic	1	500	688	55.00	53.40	.1374	.1427

a Including carbon mounting, sealing in, and exhausting, and sealing.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

ELECTRICAL APPARATUS AND SUPPLIES—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Machinists, male:							
North Atlantic	5	827	655	54.52	54.50	$0.3514	$0.3450
North Central	3	567	568	51.93	52.14	.3042	.2999
United States	8	1,394	1,223	53.47	53.41	.3322	.3241
Pattern makers, wood, male:							
North Atlantic	4	191	160	54.70	54.70	.3868	.3931
North Central	2	53	46	52.23	52.17	.3922	.3987
United States	6	244	206	54.16	54.14	.3879	.3944

FLOUR.

Bolters, male:							
North Atlantic	3	14	14	68.57	68.57	$0.2457	$0.2552
South Atlantic	3	12	12	72.00	72.00	.1208	.1284
North Central	18	87	95	57.08	56.32	.2780	.2862
South Central	5	18	19	72.00	68.21	.1632	.1787
Western	5	11	12	68.18	67.50	.2542	.2594
United States	34	142	152	62.23	61.05	.2452	.2553
Laborers, male:							
North Atlantic	7	198	186	60.45	60.45	.1831	.1849
South Atlantic	3	35	35	66.51	66.51	.1049	.1075
North Central	26	1,111	1,244	60.65	60.19	.1792	.1841
South Central	5	236	240	68.95	67.35	.1126	.1261
Western	5	52	69	64.62	64.52	.2327	.2408
United States	46	1,632	1,774	62.08	61.48	.1702	.1770
Millers, male: (a)							
North Atlantic	8	29	26	66.21	66.92	.2553	.2562
South Atlantic	3	8	8	70.50	70.50	.2003	.2053
North Central	26	194	219	62.71	63.03	.2582	.2559
South Central	5	17	20	72.00	61.20	.2528	.2882
Western	5	11	12	67.09	67.00	.3548	.3462
United States	47	259	285	64.14	63.64	.2508	.2606
Millwrights, male:							
North Atlantic	5	10	10	57.00	57.00	.4206	.4344
South Atlantic	3	3	3	60.00	60.00	.2917	.3000
North Central	21	92	86	60.30	59.91	.2906	.2987
South Central	5	16	10	59.75	58.20	.3030	.3342
Western	5	6	6	66.00	66.00	.3338	.3505
United States	39	127	115	60.24	59.83	.3044	.3163
Packers, male:							
North Atlantic	8	133	128	63.25	62.53	.1952	.1994
South Atlantic	3	52	52	69.92	69.69	.1116	.1169
North Central	26	910	850	56.08	56.83	.2265	.2305
South Central	5	145	130	65.79	61.20	.1468	.1701
Western	5	41	35	68.20	68.06	.2481	.2635
United States	47	1,281	1,195	58.88	58.81	.2103	.2166

FOUNDRY AND MACHINE SHOP.

Blacksmiths, male:							
North Atlantic	71	358	337	57.70	57.30	$0.2962	$0.3068
South Atlantic	23	64	62	55.17	55.13	.2887	.3062
North Central	64	319	296	56.51	56.40	.3094	.3115
South Central	23	47	48	56.06	56.65	.3435	.3541
Western	16	76	61	54.39	54.11	.3873	.4207
United States	197	864	804	56.69	56.52	.3111	.3200

a Including all classes of millers

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

FOUNDRY AND MACHINE SHOP—Continued.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Boiler makers, male:							
North Atlantic	33	503	515	56.46	56.32	$0.2992	$0.3055
South Atlantic	12	81	79	54.28	54.09	.2976	.3163
North Central	27	336	364	55.58	55.42	.3198	.3121
South Central	11	106	122	58.42	58.34	.3146	.3076
Western	11	126	161	54.03	53.42	.3997	.4645
United States	94	1,242	1,241	56.00	55.73	.3162	.3290
Boiler riveters, male:							
North Atlantic	11	107	83	55.24	55.64	.2871	.2755
South Atlantic	1	50	25	54.00	54.00	.2639	.2533
North Central	5	27	19	57.11	57.95	.3687	.3847
South Central	2	10	11	58.50	57.18	.1569	.1679
United States	19	194	138	55.25	55.78	.2774	.2814
Brass finishers, male:							
North Atlantic	14	368	386	54.17	54.12	.2748	.2793
North Central	9	199	198	55.76	55.93	.2736	.2699
United States	23	567	584	54.73	54.73	.2744	.2762
Core makers, male:							
North Atlantic	65	494	486	56.51	55.64	.2706	.2816
South Atlantic	12	52	44	55.00	54.86	.2769	.2862
North Central	46	307	333	55.18	55.34	.2511	.2683
South Central	9	22	19	55.50	56.00	.2867	.2934
Western	12	84	24	53.53	53.21	.4131	.4239
United States	144	879	906	55.91	55.43	.2761	.2780
Core makers, female:							
North Atlantic	2	4	3	54.75	54.67	.1314	.1472
North Central	4	119	129	54.94	54.88	.1257	.1497
United States	6	123	132	54.93	54.88	.1239	.1496
Laborers, male:							
North Atlantic	76	3,304	3,224	56.90	56.19	.1623	.1681
South Atlantic	28	974	906	55.18	55.29	.1477	.1518
North Central	67	4,411	4,716	56.52	56.40	.1744	.1786
South Central	23	621	546	56.91	56.86	.1540	.1572
Western	17	394	472	54.39	55.04	.2412	.2508
United States	211	9,764	9,656	56.45	56.19	.1690	.1750
Machinists, male:							
North Atlantic	70	3,869	4,018	56.61	55.66	.2829	.2948
South Atlantic	28	524	522	54.55	54.47	.2960	.3096
North Central	71	2,582	2,948	55.17	55.12	.2926	.2999
South Central	22	274	276	56.67	56.25	.3248	.3367
Western	17	541	510	54.46	53.94	.3759	.3940
United States	209	7,790	8,268	55.83	55.40	.2949	.3051
Molders, brass, male:							
North Atlantic	25	139	140	54.70	54.89	.3105	.3126
North Central	13	73	70	56.56	56.74	.2912	.2960
South Central	4	5	4	54.00	54.00	.3222	.3500
Western	2	6	4	54.60	54.00	.4305	.4653
United States	44	223	218	55.27	55.13	.3077	.3107
Molders, iron, male:							
North Atlantic	62	2,081	2,120	56.20	55.76	.3180	.3290
South Atlantic	20	308	314	55.31	55.18	.2999	.3219
North Central	54	1,260	1,479	55.94	55.99	.3194	.3220
South Central	19	188	203	56.77	56.10	.3218	.3339
Western	16	325	238	54.21	54.54	.4227	.4277
United States	171	4,162	4,354	55.93	55.74	.3224	.3317

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

FOUNDRY AND MACHINE SHOP—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Pattern makers, metal, male:							
North Atlantic	5	10	9	56.30	56.56	$0.3282	$0.3422
North Central	7	86	57	54.53	54.70	.3093	.3064
United States	12	96	66	54.72	54.95	.3113	.3113
Pattern makers, wood, male:							
North Atlantic	65	440	462	55.89	55.62	.3458	.3542
South Atlantic	20	76	75	55.30	55.17	.3437	.3540
North Central	56	409	383	55.18	55.05	.3420	.3436
South Central	22	62	58	56.42	56.45	.3342	.3522
Western	17	77	65	54.71	54.83	.4534	.4590
United States	180	1,064	1,043	55.52	55.37	.3512	.3567

FURNITURE.

Cabinetmakers, male:							
North Atlantic	17	400	349	53.36	53.06	$0.3012	$0.3041
South Atlantic	6	105	83	59.37	59.42	.1721	.1720
North Central	37	818	820	55.80	56.13	.2514	.2503
South Central	3	48	46	59.75	59.74	.1904	.1927
United States	63	1,371	1,298	55.50	55.65	.2577	.2577
Carvers, hand, male:							
North Atlantic	14	106	87	48.64	49.17	.3691	.3630
North Central	23	134	133	55.97	56.01	.2859	.2956
United States	37	240	220	52.73	53.30	.3221	.3222
Machine woodworkers, male:							
North Atlantic	16	199	183	56.32	56.27	.2876	.2836
South Atlantic	6	186	140	59.37	59.38	.1706	.1741
North Central	36	692	675	57.97	58.04	.2106	.2155
South Central	3	76	72	59.84	59.82	.1778	.1745
United States	61	1,153	1,070	58.03	58.03	.2101	.2156
Sawyers, male: (a)							
North Atlantic	13	80	76	54.26	54.20	.2772	.2860
South Atlantic	5	28	26	59.57	59.62	.1897	.1855
North Central	33	331	330	57.84	57.72	.2174	.2236
South Central	3	11	10	59.91	59.90	.1898	.1907
United States	54	450	442	57.36	57.28	.2256	.2313
Upholsterers, male:							
North Atlantic	8	141	124	48.89	49.01	.3969	.3981
North Central	18	284	258	55.77	55.48	.2675	.2748
United States	26	425	382	53.48	53.28	.3104	.3148
Varnishers, male: (b)							
North Atlantic	15	293	288	55.93	55.53	.2378	.2441
South Atlantic	6	125	113	59.58	59.62	.1922	.1528
North Central	37	789	830	57.31	57.24	.1997	.2044
South Central	3	22	26	59.82	59.73	.1554	.1632
United States	61	1,229	1,257	57.25	57.11	.2072	.2080

a Including all classes of sawyers.

b Including finishers.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

GAS.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Gas makers, water gas, male:							
North Atlantic	12	103	117	69.07	69.30	$0.2357	$0.2489
South Atlantic	7	24	26	77.67	78.62	.2263	.2251
North Central	14	45	57	81.11	81.72	.2084	.2178
South Central	3	5	5	73.60	73.60	.2317	.2320
Western	6	18	20	70.00	64.60	.3275	.3693
United States	42	195	225	73.11	73.20	.2366	.2486
Laborers, male: (a)							
North Atlantic	17	1,637	1,704	61.26	61.12	.1708	.1804
South Atlantic	10	693	595	62.05	62.47	.1502	.1527
North Central	18	2,634	2,450	60.98	61.29	.1781	.1791
South Central	7	360	372	60.43	60.76	.1433	.1496
Western	8	1,309	1,127	57.21	57.63	.2411	.2423
United States	60	6,633	6,248	60.39	60.67	.1839	.1866
Pipe fitters, male:							
North Atlantic	17	328	392	59.67	59.14	.2377	.2452
South Atlantic	10	125	146	58.70	58.60	.2372	.2460
North Central	17	414	466	59.50	59.27	.2229	.2281
South Central	7	69	71	60.00	60.00	.2266	.2401
Western	8	176	215	52.85	53.97	.3627	.3803
United States	59	1,112	1,290	58.44	58.31	.2512	.2614
Stokers, male: (b)							
North Atlantic	15	444	387	80.02	79.53	.2154	.2157
South Atlantic	9	207	232	75.83	76.89	.1887	.1897
North Central	17	743	768	80.52	77.69	.2010	.2137
South Central	6	88	92	82.68	81.48	.1528	.1561
Western	8	122	137	69.83	68.47	.2595	.2899
United States	55	1,604	1,616	79.08	77.45	.2052	.2139

GLASS.

Batch makers, male:							
North Atlantic	17	61	60	59.30	59.12	$0.1810	$0.1832
South Atlantic	3	9	10	57.78	57.40	.1969	.1994
North Central	8	45	43	61.11	61.16	.1984	.2076
United States	28	115	113	59.89	59.74	.1891	.1939
Blowers, flint glass, male:							
North Atlantic	12	453	440	49.60	49.65	.6413	.6570
South Atlantic	2	73	80	55.42	55.50	.5738	.5698
North Central	5	472	492	49.98	49.90	.6722	.6806
United States	19	998	1,012	50.21	50.24	.6510	.6616
Blowers, green glass, male:							
North Atlantic	5	334	444	47.91	47.77	.7616	.7963
South Atlantic	1	17	16	50.00	50.00	.7994	.8909
North Central	2	228	245	49.64	49.49	.7846	.7704
United States	8	579	705	48.65	48.42	.7718	.7894
Blowers, window glass, male:							
North Atlantic	5	140	140	41.91	41.95	.8892	.9443
North Central	3	83	85	40.00	40.00	.8571	.9213
United States	8	223	225	41.20	41.21	.8772	.9356

a At gas works and on streets. Including coal men as reported in Bulletin 71.
b Including both chargers and retort men, which are reported separately in the Nineteenth Annual Report of this Bureau.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

GLASS—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Cutters, window glass, male:							
North Atlantic	5	49	49	44.41	44.45	$0.7044	$0.7489
North Central	3	37	35	55.14	55.54	.6831	.7490
United States	8	86	84	49.02	49.07	.6953	.7490
Flatteners, window glass, male:							
North Atlantic	5	31	31	57.16	57.55	.7519	.8471
North Central	3	23	24	56.35	56.00	.6788	.7738
United States	8	54	55	56.81	56.87	.7208	.8151
Gaffers, flint glass, male:							
North Atlantic	6	94	88	51.17	51.28	.5376	.5306
North Central	1	8	10	49.50	49.50	.8014	.7989
United States	7	102	98	51.04	51.10	.5583	.5580
Gatherers, flint glass, male:							
North Atlantic	8	174	159	50.41	50.48	.3032	.3090
South Atlantic	1	26	30	58.00	58.00	.2956	.3031
North Central	1	139	217	49.50	49.50	.3248	.3361
United States	10	339	406	50.62	50.51	.3115	.3231
Gatherers, window glass, male:							
North Atlantic	5	140	139	41.91	41.94	.6429	.6867
North Central	3	84	86	40.00	40.00	.6079	.6829
United States	8	224	225	41.19	41.20	.6298	.6852
Laborers, male:							
North Atlantic	19	556	572	59.07	59.07	.1511	.1527
South Atlantic	3	51	57	58.75	58.88	.1391	.1380
North Central	8	803	935	59.65	59.66	.1530	.1726
United States	30	1,410	1,564	59.39	59.41	.1518	.1641
Leersmen, male:							
North Atlantic	20	159	151	57.18	57.44	.1718	.1784
South Atlantic	3	13	13	59.54	59.54	.1702	.1702
North Central	8	111	77	57.41	56.36	.1829	.1994
United States	31	283	241	57.37	57.21	.1761	.1846
Packers, male:							
North Atlantic	19	192	241	56.01	56.40	.1997	.2022
South Atlantic	3	21	25	51.62	52.16	.2073	.2096
North Central	5	205	211	59.47	59.46	.1886	.1921
United States	27	418	477	57.49	57.53	.1947	.1981
Pressers, male:							
North Atlantic	2	124	133	52.51	52.44	.4074	.5002
South Atlantic	2	13	15	53.23	53.27	.7866	.8817
North Central	4	70	84	49.99	50.33	.6357	.6388
United States	8	207	232	51.70	51.73	.5084	.5751
Press gatherers, male:							
North Atlantic	2	124	133	52.51	52.44	.3109	.3833
South Atlantic	1	8	8	53.00	53.00	.6404	.7230
North Central	4	66	70	50.05	50.00	.4826	.4723
United States	7	198	211	51.71	51.65	.3815	.4257
Teasers, male:							
North Atlantic	17	97	96	76.49	76.42	.2022	.2035
South Atlantic	2	13	15	80.31	80.80	.1782	.1783
North Central	7	66	75	83.58	83.63	.1751	.1840
United States	26	176	186	79.43	79.68	.1903	.1936

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

HARNESS.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Collar makers, male:							
North Atlantic	8	35	31	55.46	55.06	$0.2901	$0.2901
South Atlantic	2	20	19	58.70	55.58	.1927	.2118
North Central	15	206	200	56.21	55.97	.2466	.2456
South Central	6	41	50	57.02	56.60	.2338	.2291
Western	3	16	21	54.00	54.00	.3629	.3902
United States	34	318	321	56.28	55.83	.2522	.2548
Cutters, male:							
North Atlantic	12	13	14	55.92	55.64	.3009	.3011
South Atlantic	6	23	23	58.04	55.87	.2348	.2480
North Central	23	146	141	56.66	56.66	.2711	.2759
South Central	6	55	49	57.91	57.78	.2657	.2731
Western	7	14	12	54.36	54.00	.3566	.3750
United States	54	251	239	56.89	56.62	.2729	.2791
Fitters and finishers, male:							
North Atlantic	8	58	51	54.81	54.69	.2870	.2911
South Atlantic	4	65	65	58.17	55.52	.1935	.2137
North Central	15	365	348	57.03	56.86	.2511	.2527
South Central	3	29	38	56.38	56.05	.2311	.2282
Western	3	26	24	54.00	54.00	.3285	.3285
United States	33	543	526	56.75	56.30	.2507	.2533
Harness makers, male: (a)							
North Atlantic	5	48	32	55.48	56.50	.2638	.2614
South Atlantic	2	12	12	54.00	54.00	.2302	.2400
North Central	14	309	316	56.56	55.81	.2491	.2503
South Central	4	44	48	58.55	58.27	.2553	.2565
Western	4	45	45	54.11	54.00	.3199	.3369
United States	29	458	453	56.33	55.89	.2580	.2601
Stitchers, hand, male:							
North Atlantic	10	53	42	54.43	54.12	.2238	.2315
North Central	4	21	16	57.33	56.06	.2252	.2142
United States	14	74	58	55.26	54.66	.2242	.2268
Stitchers, machine, male:							
North Atlantic	3	3	3	53.67	53.67	.3026	.3199
South Atlantic	5	16	15	57.81	55.60	.2221	.2512
North Central	23	138	144	56.85	56.53	.2602	.2625
South Central	6	37	38	57.54	57.58	.2570	.2708
Western	7	15	14	54.33	54.00	.3452	.3691
United States	44	209	214	56.82	56.45	.2635	.2710

HATS, FUR.

Blockers, male:							
North Atlantic	13	189	206	53.85	53.88	$0.3534	$0.3647
Colorers, male:							
North Atlantic	14	69	85	55.43	54.67	.1960	.1971
Coners, male:							
North Atlantic	14	87	104	53.79	53.92	.2881	.2891
Curlers, male:							
North Atlantic	11	81	89	53.48	53.46	.5031	.4348
Feeders, female:							
North Atlantic	12	57	75	54.12	54.16	.1145	.1266
Finishers, male:							
North Atlantic	14	882	1,002	53.91	53.45	.3317	.3310
Flangers, male:							
North Atlantic	13	155	187	55.95	54.14	.3304	.3244
Fur blowers, male:							
North Atlantic	14	78	99	55.18	54.09	.1644	.1759
Hardeners, male:							
North Atlantic	14	77	89	54.00	54.11	.2925	.2959

a Do all parts of the work.

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TABLE 1.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

HATS, FUR—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Pouncers, male:							
North Atlantic	11	221	285	54.31	53.72	$0.2542	$0.2451
Sizers, male:							
North Atlantic	14	1,222	1,217	53.94	53.58	.3804	.3135
Stiffeners, male:							
North Atlantic	14	38	47	53.79	53.91	.3991	.3665
Trimmers, female:							
North Atlantic	14	1,268	1,382	54.33	53.65	.1460	.1507
Weighers, female:							
North Atlantic	8	24	28	53.29	53.32	.1260	.1386

HOSIERY AND KNIT GOODS.

Boarders, male:							
North Atlantic	13	224	236	58.60	58.66	$0.2002	$0.2220
South Atlantic	4	89	61	63.80	63.70	.1148	.1444
North Central	4	86	92	58.12	57.75	.1403	.1415
United States	21	399	409	59.66	59.12	.1682	.1885
Finishers, female:							
North Atlantic	15	891	871	58.05	58.97	.1377	.1458
South Atlantic	4	92	92	64.16	64.26	.0965	.1052
North Central	8	354	342	56.29	57.18	.1108	.1165
United States	27	1,337	1,305	58.51	58.87	.1271	.1353
Knitters, male:							
North Atlantic	10	296	328	63.28	60.39	.2031	.2030
South Atlantic	4	81	125	64.33	64.41	.1103	.1241
North Central	5	168	171	57.48	57.23	.2741	.3023
United States	19	547	624	61.65	60.33	.2112	.2144
Knitters, female:							
North Atlantic	14	566	473	58.35	58.07	.1348	.1381
South Atlantic	3	78	84	59.38	59.25	.1001	.1059
North Central	7	335	327	56.33	56.12	.1073	.1104
United States	24	979	884	57.74	57.46	.1226	.1270
Loopers, female:							
North Atlantic	11	403	402	58.62	58.42	.1455	.1471
South Atlantic	5	167	142	63.98	63.68	.0885	.1017
North Central	4	128	141	58.48	57.69	.1219	.1252
United States	20	698	685	59.88	59.40	.1275	.1332
Menders, female:							
North Atlantic	17	334	343	59.16	58.87	.1272	.1310
South Atlantic	5	115	106	62.64	62.18	.0756	.0947
North Central	5	140	128	57.50	56.98	.1187	.1194
United States	27	589	577	59.45	59.06	.1151	.1199
Pressers, male:							
North Atlantic	11	61	65	59.26	59.35	.1697	.1757
South Atlantic	3	30	28	65.30	65.54	.0877	.1158
North Central	4	25	22	56.32	56.59	.1628	.1853
United States	18	116	115	60.19	60.33	.1470	.1629
Pressers, female:							
North Atlantic	7	157	140	58.63	58.75	.1032	.1014
North Central	4	19	19	55.00	55.00	.1203	.1216
United States	11	176	159	58.35	58.30	.1051	.1036
Ribbers, female:							
North Atlantic	5	138	111	59.78	59.62	.1695	.1704
North Central	3	44	53	59.09	58.96	.1226	.1224
United States	8	182	164	59.62	59.41	.1430	.1549

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

IRON AND STEEL, BAR.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Catchers, male:							
North Atlantic	12	53	55	64.04	63.89	$0.3338	$0.3484
South Atlantic	3	13	13	60.92	60.92	.2530	.2732
North Central	8	42	42	67.36	67.36	.5489	.5320
South Central	2	8	7	72.00	72.00	.2647	.3055
United States	25	116	117	65.44	65.29	.3978	.4034
Heaters, male:							
North Atlantic	11	40	41	64.70	64.63	.4948	.5656
South Atlantic	3	13	12	61.85	62.00	.4793	.5504
North Central	11	64	64	67.52	67.52	.6553	.6368
South Central	2	12	12	72.00	72.00	.4846	.4913
United States	27	129	129	66.49	66.50	.5719	.5926
Heaters' helpers, male:							
North Atlantic	11	55	56	67.64	67.50	.2456	.2587
South Atlantic	3	13	12	60.92	61.00	.2218	.2740
North Central	10	70	70	66.99	66.99	.3340	.3224
South Central	2	12	12	72.00	72.00	.1821	.1933
United States	26	150	150	67.10	67.10	.2797	.2844
Hot straighteners, male:							
North Atlantic	12	71	75	63.41	63.97	.2066	.2124
South Atlantic	3	31	34	61.16	61.06	.1535	.1701
North Central	7	53	55	69.66	69.75	.2600	.2543
South Central	2	14	12	72.00	72.00	.1366	.1418
United States	24	169	176	65.67	65.76	.2078	.2125
Rollers, male:							
North Atlantic	12	37	38	63.76	63.66	.7042	.7734
South Atlantic	3	9	9	61.33	61.33	.7002	.7739
North Central	8	32	33	70.25	70.30	1.0850	1.0397
South Central	2	8	7	72.00	72.00	.9401	1.0059
United States	25	86	87	66.69	66.61	.8674	.8931
Roughers, male:							
North Atlantic	12	91	95	65.36	65.33	.3854	.4040
South Atlantic	3	21	21	61.14	61.14	.3410	.3785
North Central	11	117	121	61.01	61.37	.5182	.5761
South Central	2	18	17	72.00	72.00	.3324	.3519
United States	28	247	254	63.43	63.54	.4407	.4804

IRON AND STEEL, BESSEMER CONVERTING.

Blowers, male:							
North Atlantic	7	18	19	60.33	61.26	$0.5440	$0.5329
South Atlantic	3	6	6	74.00	74.00	.4229	.4412
North Central	5	11	11	66.55	66.55	.6174	.6382
South Central	2	4	4	75.00	75.00	.3898	.4125
United States	17	39	40	65.69	66.00	.5302	.5360
Bottom makers, male:							
North Atlantic	7	22	23	69.00	69.39	.3142	.2982
South Atlantic	3	7	7	72.00	72.00	.2193	.2320
North Central	5	12	12	67.00	67.00	.3430	.3428
South Central	2	7	7	65.14	64.23	.1790	.1689
United States	17	48	49	68.38	68.45	.2879	.2812
Ladle liners, male:							
North Atlantic	7	19	20	64.74	65.40	.3807	.3710
South Atlantic	3	8	8	73.50	73.50	.3166	.3459
North Central	5	11	11	66.55	66.55	.4443	.4424
South Central	2	4	4	75.00	75.00	.2240	.2527
United States	17	42	43	67.86	68.09	.3702	.3736

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

IRON AND STEEL, BESSEMER CONVERTING—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Melters, male:							
North Atlantic	7	25	28	66.48	67.29	$0.4084	$0.3831
South Atlantic	3	8	8	72.00	72.00	.3846	.4212
North Central	4	22	22	50.55	50.55	.5765	.5440
South Central	1	2	2	66.00	66.00	.4229	.4695
United States	15	57	60	61.09	61.73	.4705	.4501
Steel pourers, male:							
North Atlantic	7	29	30	56.41	53.20	.5239	.5135
South Atlantic	3	6	6	74.00	74.00	.4592	.5071
North Central	5	17	17	51.53	51.53	.7088	.6690
South Central	1	2	2	66.00	66.00	.4229	.4636
United States	16	54	55	57.19	55.42	.5712	.5596
Vessel men, male:							
North Atlantic	7	30	28	65.00	57.00	.5512	.5734
South Atlantic	3	10	10	72.00	72.00	.4123	.4484
North Central	5	22	22	55.09	55.09	.7634	.7349
South Central	2	6	6	78.00	78.00	.3049	.3316
United States	17	68	66	63.97	60.55	.5777	.5863

IRON AND STEEL, BLAST FURNACE.

Cinder snappers, male:							
North Atlantic	11	127	133	84.00	84.00	$0.1478	$0.1567
South Atlantic	3	36	38	84.00	84.00	.1375	.1404
North Central	7	52	64	84.00	84.00	.1743	.1794
South Central	5	26	26	84.00	84.00	.1287	.1264
United States	26	241	261	84.00	84.00	.1499	.1569
Hot blast men, male:							
North Atlantic	11	70	85	84.00	84.00	.1813	.1907
South Atlantic	3	14	16	84.00	84.00	.1536	.1561
North Central	7	36	46	84.00	84.00	.1759	.1897
South Central	5	18	22	84.00	84.00	.1560	.1530
United States	26	138	169	84.00	84.00	.1738	.1822
Keepers, male:							
North Atlantic	11	74	88	84.00	84.00	.2023	.2137
South Atlantic	3	14	16	84.00	84.00	.1836	.1865
North Central	7	44	46	84.00	84.00	.2133	.2228
South Central	5	24	24	84.00	84.00	.1662	.1656
United States	26	156	174	84.00	84.00	.1981	.2070
Keepers' helpers, male:							
North Atlantic	11	144	170	84.00	84.00	.1637	.1718
South Atlantic	3	40	50	84.00	84.00	.1396	.1428
North Central	7	125	129	84.00	84.00	.1749	.1841
South Central	5	84	86	84.00	84.00	.1287	.1331
United States	26	393	435	84.00	84.00	.1573	.1644
Top fillers, male:							
North Atlantic	7	82	83	81.95	81.98	.1640	.1763
South Atlantic	2	30	36	84.00	84.00	.1330	.1537
North Central	5	37	37	79.46	79.46	.1995	.2095
South Central	5	22	22	84.00	84.00	.1583	.1591
United States	19	171	178	82.04	82.11	.1655	.1765

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

LEATHER.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Colorers, male:							
North Atlantic	17	169	133	58.86	58.78	$0.1997	$0.2114
South Atlantic	2	29	28	60.00	60.00	.1463	.1491
North Central	11	55	50	59.22	59.28	.2167	.2325
South Central	2	17	15	59.29	59.33	.1802	.1919
Western	2	2	2	55.50	55.50	.2388	.2520
United States	34	272	228	59.06	59.05	.1965	.2074
Fleshers, male:							
North Atlantic	24	130	118	59.02	58.99	.1981	.2001
South Atlantic	14	76	87	60.00	60.00	.1580	.1614
North Central	14	69	68	59.41	59.38	.1961	.2027
South Central	5	25	19	59.76	59.68	.1752	.1827
Western	3	12	12	54.50	54.50	.2677	.2691
United States	60	312	304	59.23	59.23	.1887	.1912
Glazers, male:							
North Atlantic	14	569	472	59.26	59.39	.1704	.1756
South Atlantic	2	80	97	60.00	60.00	.1877	.1873
North Central	3	21	31	59.05	59.32	.1756	.1978
United States	19	670	600	59.34	59.49	.1727	.1786
Glazers, female:							
North Atlantic	4	63	48	59.73	59.60	.1201	.1413
South Atlantic	2	119	198	60.00	60.00	.1070	.1127
North Central	3	49	51	59.78	59.76	.1165	.1209
United States	9	231	297	59.88	59.90	.1126	.1187
Limers, male:							
North Atlantic	23	234	196	59.01	58.90	.1804	.1829
South Atlantic	13	87	84	60.00	60.00	.1491	.1479
North Central	13	97	92	59.54	59.60	.1709	.1825
South Central	5	18	16	59.89	59.88	.1339	.1496
Western	4	18	15	55.17	55.00	.2427	.2489
United States	58	454	403	59.19	59.18	.1730	.1767
Rollers, male:							
North Atlantic	11	66	73	57.56	57.56	.1957	.1969
South Atlantic	8	52	50	60.00	60.00	.1549	.1612
North Central	4	32	31	59.41	59.42	.1807	.1925
South Central	3	21	17	59.90	59.88	.1464	.1555
Western	1	6	6	54.00	54.00	.2778	.2778
United States	27	177	177	58.77	58.68	.1779	.1848
Setters out, male:							
North Atlantic	21	284	229	59.16	59.17	.1843	.1876
South Atlantic	3	22	28	60.00	60.00	.1390	.1411
North Central	11	159	164	58.45	58.48	.2194	.2276
South Central	1	6	5	60.00	60.00	.2467	.2503
Western	4	20	18	54.90	55.00	.2623	.2675
United States	40	491	444	58.80	58.81	.1976	.2034
Shavers, male:							
North Atlantic	19	113	85	58.39	58.04	.3211	.3389
South Atlantic	2	31	38	60.00	60.00	.1865	.1859
North Central	11	118	123	59.43	59.54	.2287	.2459
South Central	1	4	3	60.00	60.00	.2552	.2167
Western	4	8	8	55.13	55.13	.3122	.3248
United States	37	274	257	58.95	58.98	.2648	.2699
Stakers, male:							
North Atlantic	12	369	327	59.41	59.50	.2118	.2103
South Atlantic	2	44	58	60.00	60.00	.1847	.1807
North Central	7	58	61	59.50	59.70	.1695	.1845
Western	2	10	10	57.00	57.00	.2509	.2597
United States	23	481	456	59.42	59.54	.2050	.2042

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

LEATHER—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Tanyard hands, male:(a)							
North Atlantic	25	362	316	58.97	58.98	$0.1645	$0.1677
South Atlantic	14	252	252	60.00	60.00	.1329	.1360
North Central	13	286	269	59.56	59.49	.1711	.1767
South Central	4	40	48	60.00	60.00	.1257	.1274
Western	4	35	40	54.69	54.60	.2312	.2433
United States	60	975	925	59.30	59.27	.1591	.1629
Unhairers, male:							
North Atlantic	24	193	156	58.96	58.86	.2112	.1926
South Atlantic	14	113	104	60.00	60.00	.1532	.1595
North Central	13	69	54	59.19	59.26	.1986	.2129
South Central	3	11	10	60.00	60.00	.1371	.1498
Western	4	27	24	55.00	55.13	.2516	.2548
United States	58	413	348	59.05	59.04	.1939	.1889

LIQUORS, MALT.

Bottlers, male:							
North Atlantic	12	128	151	57.05	55.91	$0.1984	$0.2092
South Atlantic	5	53	54	57.28	51.67	.1891	.2088
North Central	19	3,909	4,243	50.96	48.56	.1917	.2184
South Central	4	236	245	52.42	49.91	.1987	.2136
Western	3	50	39	48.00	48.00	.3096	.3265
United States	43	4,376	4,732	51.26	48.89	.1936	.2187
Cellar men, male:							
North Atlantic	22	344	366	54.34	54.19	.3186	.3226
South Atlantic	5	43	43	56.65	53.30	.2995	.3224
North Central	18	447	465	48.26	48.25	.3349	.3428
South Central	6	58	60	50.69	50.60	.3218	.3270
Western	4	52	65	48.00	48.00	.4269	.4611
United States	55	944	999	50.99	50.77	.3316	.3413
Coopers, male:							
North Atlantic	21	73	77	53.40	53.27	.3301	.3451
South Atlantic	4	5	5	57.60	52.80	.2826	.2963
North Central	12	279	327	48.42	48.38	.3237	.3241
South Central	3	14	15	48.00	48.00	.3650	.3961
Western	4	29	28	48.00	48.00	.4472	.4743
United States	44	400	452	49.40	49.23	.3348	.3391
Drivers, male:							
North Atlantic	22	618	644	57.31	57.04	.3083	.3025
South Atlantic	5	97	100	59.20	58.26	.3325	.3464
North Central	19	369	385	57.65	57.40	.2879	.2861
South Central	6	147	152	56.27	55.02	.2639	.2740
Western	5	46	47	57.00	57.00	.3587	.3751
United States	57	1,277	1,328	57.42	57.00	.2971	.3004
Fermenters, male:							
North Atlantic	22	109	115	54.58	54.44	.3214	.3268
South Atlantic	4	17	17	56.12	52.59	.3204	.3415
North Central	17	147	152	48.49	48.53	.3327	.3404
South Central	3	8	8	52.50	52.50	.3162	.3206
Western	3	11	11	48.00	48.00	.4208	.4436
United States	49	292	303	51.30	51.09	.3306	.3385

a Handle hides at the vats and in the yards; are called tanners in the Nineteenth Annual Report of this Bureau.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

LIQUORS, MALT—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Kettle men, male:							
North Atlantic	22	93	103	54.58	54.32	$0.3217	$0.3321
South Atlantic	5	13	13	55.38	53.54	.3133	.3277
North Central	19	128	130	48.40	48.35	.3385	.3416
South Central	6	15	17	51.20	50.82	.3452	.3614
Western	4	20	22	48.00	48.00	.4392	.4693
United States	56	269	285	51.00	50.86	.3394	.3485
Malt house men, male:							
North Atlantic	4	84	81	65.18	64.94	.2360	.2425
North Central	9	180	209	49.04	49.34	.3376	.3482
Western	3	31	38	48.26	48.21	.4212	.4428
United States	16	295	328	53.55	53.06	.3175	.3350
Washers, male:							
North Atlantic	22	289	267	54.31	54.15	.2798	.2900
South Atlantic	5	28	33	56.36	53.45	.2707	.2839
North Central	19	393	430	48.39	48.47	.3121	.3175
South Central	5	34	39	49.94	50.00	.3075	.3169
Western	4	58	68	48.00	48.00	.4210	.4498
United States	55	802	837	50.84	50.51	.3067	.3181

LUMBER.

Cant setters, male:							
North Atlantic	2	3	3	60.00	60.00	$0.1950	$0.1950
North Central	9	29	29	60.83	60.83	.2089	.2179
South Central	2	4	4	60.00	60.00	.1875	.1875
Western	2	2	2	60.00	60.00	.2050	.2175
United States	15	38	38	60.63	60.63	.2053	.2129
Carriage men, male: (a)							
North Atlantic	6	22	22	60.00	60.00	.2686	.2759
South Atlantic	13	48	49	61.98	60.76	.1589	.1638
North Central	27	143	141	60.25	60.26	.2330	.2432
South Central	18	88	85	60.82	60.42	.1967	.2152
Western	10	65	58	60.00	60.00	.2417	.2578
United States	74	366	355	60.55	60.31	.2183	.2300
Choppers and sawyers, in woods, male:							
South Atlantic	10	204	214	62.21	62.27	.1433	.1449
North Central	13	1,854	2,025	60.34	60.48	.1831	.1906
South Central	5	164	153	60.37	60.39	.1787	.1844
Western	7	316	321	61.56	61.50	.2940	.3158
United States	35	2,538	2,713	60.64	60.73	.1934	.2013
Edgermen, male:							
North Atlantic	5	13	13	60.00	60.00	.2765	.2773
South Atlantic	13	18	18	62.00	61.06	.1765	.1821
North Central	26	83	85	60.22	60.21	.2576	.2641
South Central	18	42	40	60.57	60.30	.2428	.2523
Western	10	21	19	60.00	60.00	.3268	.3420
United States	72	177	175	60.44	60.28	.2554	.2624
Filers, male:							
North Atlantic	5	13	12	60.00	60.00	.3500	.4421
South Atlantic	11	16	16	62.50	60.69	.4440	.4725
North Central	25	53	55	60.00	60.00	.4816	.4864
South Central	16	26	23	60.69	60.52	.5387	.5708
Western	9	27	25	60.00	60.00	.5113	.5402
United States	66	135	131	60.43	60.18	.4814	.5057

a Including band setters and circular setters.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

LUMBER—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Laborers, male:							
North Atlantic	5	207	195	60.00	60.00	$0.1688	$0.1799
South Atlantic	13	971	1,016	60.71	59.96	.1332	.1367
North Central	27	2,464	2,467	60.32	60.16	.1744	.1804
South Central	18	1,843	1,686	61.00	60.74	.1507	.1604
Western	9	2,048	1,792	60.00	60.00	.2103	.2245
United States	72	7,533	7,156	60.44	60.22	.1729	.1805
Sawyers, band, male:							
North Atlantic	4	11	10	60.00	60.00	.5136	.4870
South Atlantic	7	11	11	62.45	61.36	.5191	.5304
North Central	26	62	60	60.29	60.30	.5063	.5230
South Central	12	21	20	61.14	60.60	.5697	.5970
Western	7	22	20	60.00	60.00	.4975	.5069
United States	56	127	121	60.54	60.37	.5170	.5303
Sawyers, circular, male:							
North Atlantic	2	2	2	60.00	60.00	.3500	.3500
South Atlantic	6	6	6	61.67	60.83	.3673	.3700
North Central	9	12	14	60.00	60.00	.3667	.3411
South Central	8	15	14	60.00	60.00	.5119	.5378
Western	4	7	6	60.00	60.00	.5456	.5699
United States	29	42	42	60.24	60.12	.4477	.4439
Sawyers, gang, male:							
North Atlantic	3	6	6	60.00	60.00	.2308	.2375
South Atlantic	2	3	3	59.33	56.00	.1667	.1833
North Central	10	16	16	60.38	60.38	.3072	.3210
South Central	3	4	4	60.00	60.00	.2815	.2877
Western	3	3	3	60.00	60.00	.3083	.3250
United States	21	32	32	60.13	59.81	.2766	.2886
Trimmers, male:							
North Atlantic	2	6	6	60.00	60.00	.2067	.2133
South Atlantic	12	19	21	62.74	62.19	.1494	.1496
North Central	26	131	117	60.27	60.31	.2274	.2285
South Central	16	42	42	60.43	60.43	.1799	.1836
Western	10	34	30	60.00	60.00	.2487	.2595
United States	66	232	216	60.46	60.46	.2150	.2160

MARBLE AND STONE WORK.

Bed rubbers, male:							
North Atlantic	26	84	85	49.30	49.38	$0.3443	$0.3338
South Atlantic	6	22	18	53.91	53.89	.2037	.2070
North Central	18	92	97	55.58	56.18	.2596	.2564
South Central	8	55	55	63.75	63.49	.1849	.1963
Western	5	12	20	50.00	49.80	.4042	.4356
United States	63	265	275	54.89	54.92	.2729	.2781
Carvers, male:							
North Atlantic	27	110	103	45.31	45.36	.6321	.6270
South Atlantic	5	9	14	52.44	50.14	.4568	.4989
North Central	13	22	18	51.36	50.22	.4689	.4862
South Central	8	14	15	51.36	50.87	.4456	.4564
Western	11	20	21	48.80	48.00	.5039	.5424
United States	64	175	171	47.32	47.07	.5730	.5763
Laborers, male:							
North Atlantic	37	359	381	50.78	51.31	.2497	.2527
South Atlantic	20	178	154	54.30	54.52	.1715	.1681
North Central	37	306	290	56.81	56.57	.2009	.2084
South Central	20	285	288	58.57	58.40	.1405	.1502
Western	10	39	41	48.92	49.02	.3023	.3220
United States	124	1,167	1,154	54.74	54.75	.2001	.2072

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

MARBLE AND STONE WORK—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Letterers, male:							
North Atlantic	27	69	72	49.36	49.24	$0.3969	$0.4010
South Atlantic	4	8	7	54.75	54.86	.3546	.3497
North Central	11	24	25	52.33	52.60	.3834	.3819
South Central	6	25	19	52.88	52.11	.3347	.3785
Western	9	20	19	48.60	48.84	.4785	.4705
United States	57	146	142	50.64	50.44	.3929	.4014
Marble cutters, male:							
North Atlantic	24	185	204	46.82	46.54	.4900	.4962
South Atlantic	13	76	52	52.11	51.42	.3730	.3742
North Central	18	86	92	54.73	55.09	.3200	.3213
South Central	18	82	88	55.60	53.85	.3049	.3580
Western	12	28	29	49.29	48.90	.4366	.4952
United States	85	457	465	50.91	50.31	.4021	.4217
Marble polishers, male:							
North Atlantic	20	147	182	48.86	48.12	.2830	.3139
South Atlantic	8	47	41	54.83	54.59	.1979	.1898
North Central	15	131	127	54.27	55.41	.2212	.2262
South Central	18	84	99	56.89	57.28	.1809	.1866
Western	12	30	32	49.87	50.38	.3685	.3995
United States	73	439	481	52.72	52.63	.2418	.2597
Planers, male:							
North Atlantic	12	57	67	48.35	47.99	.4526	.4645
South Atlantic	4	11	12	51.82	52.00	.3805	.3634
North Central	16	55	61	55.25	55.92	.3420	.3425
Western	4	4	4	48.50	48.50	.5031	.5531
United States	36	127	144	51.65	51.69	.4000	.4069
Sawyers, male:							
North Atlantic	19	84	78	48.95	49.13	.3094	.3171
South Atlantic	4	7	6	53.71	53.67	.2235	.2237
North Central	29	59	61	57.93	58.07	.2558	.2572
South Central	7	34	37	60.88	60.81	.1830	.1895
Western	7	10	9	54.80	55.56	.3600	.3792
United States	66	194	191	54.25	54.69	.2705	.2732
Stonecutters, granite, male:							
North Atlantic	43	700	677	47.55	47.33	.4125	.4148
South Atlantic	22	154	149	48.34	48.34	.3936	.4044
North Central	10	60	66	52.75	53.41	.3716	.3731
South Central	9	70	60	49.73	49.23	.3780	.3993
Western	15	170	206	47.55	47.67	.5556	.6032
United States	99	1,154	1,158	48.06	47.97	.4268	.4438
Stonecutters, soft stone, male:							
North Atlantic	22	638	513	45.22	45.19	.5215	.5280
South Atlantic	13	88	96	48.17	48.16	.4839	.4859
North Central	34	339	313	46.32	46.15	.5138	.5216
South Central	12	100	69	46.32	46.49	.4948	.5014
Western	11	79	73	44.76	44.44	.6023	.6438
United States	92	1,244	1,064	45.79	45.77	.5197	.5285
Stone polishers, male:							
North Atlantic	14	30	26	49.20	49.38	.3067	.3210
South Atlantic	5	8	6	52.88	52.67	.2047	.2278
North Central	7	39	26	57.64	59.00	.1977	.2120
South Central	2	3	3	49.00	49.00	.2764	.2575
Western	7	10	10	46.00	46.60	.3688	.4160
United States	35	90	71	52.82	52.77	.2563	.2839

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

PAPER AND WOOD PULP.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Back tenders, male:							
North Atlantic	16	208	244	64.14	55.14	$0.1766	$0.2249
North Central	9	55	55	68.33	68.33	.1580	.1664
United States	25	263	299	65.02	57.57	.1727	.2142
Beaters, male:							
North Atlantic	17	420	502	61.23	53.34	.1783	.2054
North Central	10	112	114	68.79	68.74	.1628	.1665
United States	27	532	616	62.82	56.19	.1750	.1982
Bleachers, male:							
North Atlantic	8	83	81	53.25	53.47	.2036	.2113
North Central	5	28	28	62.57	62.57	.1640	.1668
United States	13	111	109	55.60	55.81	.1936	.1999
Calendrers, male:							
North Atlantic	8	191	231	54.56	56.20	.1980	.2047
North Central	6	59	59	64.88	64.88	.1752	.1777
United States	14	250	290	57.00	57.97	.1926	.1992
Calendrers, female:							
North Atlantic	2	33	17	55.00	55.06	.1382	.1595
Cutters, male:							
North Atlantic	12	94	89	52.24	58.01	.2123	.1722
North Central	8	42	42	59.14	59.12	.1758	.1796
United States	20	136	131	54.38	58.37	.2010	.1746
Cutters, female:							
North Atlantic	11	179	164	54.94	60.18	.1088	.1101
North Central	9	56	60	59.95	59.97	.0956	.1046
United States	20	235	224	56.13	60.13	.1056	.1086
Enamelers, male:							
North Atlantic	2	65	130	48.55	48.37	.2160	.2333
North Central	1	24	24	60.00	60.00	.1796	.1879
United States	3	89	154	51.64	50.18	.2062	.2263
Finishers, male:							
North Atlantic	14	169	173	60.05	56.96	.1776	.1959
North Central	9	59	58	59.93	61.40	.1791	.1835
United States	23	228	231	60.02	58.07	.1780	.1928
Finishers, female:							
North Atlantic	6	50	64	57.70	56.70	.1313	.1374
North Central	6	64	63	59.97	60.52	.1013	.1082
United States	12	114	127	58.97	58.60	.1144	.1229
Laborers, male:							
North Atlantic	17	830	909	59.31	58.65	.1573	.1606
North Central	11	266	284	60.62	60.59	.1499	.1550
United States	28	1,096	1,193	59.63	59.11	.1555	.1593
Machine tenders, male:							
North Atlantic	18	238	276	61.11	53.99	.2771	.3349
North Central	10	52	52	68.35	68.35	.2696	.2716
United States	28	290	328	62.41	56.27	.2757	.3249
Press tenders, male:							
North Atlantic	4	74	79	66.73	58.90	.1572	.1842
North Central	3	16	16	61.44	61.44	.1343	.1453
United States	7	90	95	65.79	59.33	.1531	.1777

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

PAPER AND WOOD PULP—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Pulp grinders, male:							
North Atlantic	6	120	162	68.11	52.64	$0.1592	$0.1975
North Central	2	14	13	71.93	71.92	.1342	.1492
United States	8	134	175	68.51	54.07	.1566	.1939
Rag sorters, male:							
North Atlantic	2	39	43	57.85	59.86	.1675	.1628
Rag sorters, female:							
North Atlantic	6	191	185	52.10	52.85	.1043	.1150
North Central	5	55	66	59.56	59.64	.0979	.1168
United States	11	246	251	53.77	54.63	.1029	.1155
Wood cookers, male:							
North Atlantic	6	46	39	61.39	56.28	.2036	.2421
North Central	2	4	4	71.75	71.75	.1833	.1885
United States	8	50	43	62.22	57.72	.2019	.2371
Wood preparers, male:							
North Atlantic	8	186	211	62.32	56.76	.1637	.1990
North Central	2	50	38	59.90	59.89	.1505	.1618
United States	10	236	249	61.81	57.24	.1609	.1933

PLANING MILLS.

Carpenters, male:							
North Atlantic	29	491	533	53.64	53.57	$0.3173	$0.3258
South Atlantic	12	371	266	55.36	55.78	.2953	.2976
North Central	41	543	558	57.34	56.83	.2698	.2782
South Central	11	124	119	55.65	55.76	.2645	.2704
Western	9	72	98	50.03	50.51	.4317	.4707
United States	102	1,601	1,574	55.29	55.07	.2972	.3090
Framers, male:							
North Atlantic	6	51	42	55.37	54.79	.2487	.2899
South Atlantic	7	59	48	56.75	56.75	.2702	.2609
North Central	24	145	143	59.03	58.79	.2297	.2336
Western	2	8	8	60.00	60.00	.2500	.2656
United States	39	263	241	57.84	57.73	.2431	.2464
Glaziers, male:							
North Atlantic	10	33	24	55.15	55.04	.2385	.2547
South Atlantic	6	16	16	57.00	57.38	.2245	.2205
North Central	23	51	55	58.90	58.78	.2155	.2193
South Central	5	11	9	56.73	58.00	.2177	.2517
Western	3	16	16	50.25	51.00	.3827	.4480
United States	47	127	120	56.41	56.75	.2439	.2595
Laborers, male:							
North Atlantic	27	308	289	57.70	57.54	.1699	.1745
South Atlantic	14	656	664	57.01	57.87	.1293	.1311
North Central	43	1,377	1,402	59.41	59.31	.1576	.1627
South Central	17	764	754	59.98	59.71	.1556	.1601
Western	6	195	199	56.40	56.89	.2279	.2434
United States	107	3,300	3,308	58.73	58.81	.1568	.1617
Machine woodworkers, male:							
North Atlantic	31	299	329	54.51	54.21	.3001	.3071
South Atlantic	14	207	252	56.83	56.51	.2482	.2430
North Central	47	828	863	58.82	58.63	.2167	.2256
South Central	18	247	238	58.54	58.34	.2122	.2112
Western	10	156	175	53.44	53.85	.3280	.3465
United States	120	1,737	1,857	57.32	57.07	.2442	.2520

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

PLANING MILLS—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Sawyers, male:(a)							
North Atlantic	27	151	147	54.23	54.07	$0.2947	$0.3020
South Atlantic	14	71	65	55.62	55.40	.2469	.2553
North Central	45	337	351	58.88	58.88	.2176	.2218
South Central	10	48	45	57.63	57.87	.2255	.2203
Western	8	68	56	53.76	52.04	.3290	.3607
United States	104	675	664	56.89	56.88	.2497	.2544

POTTERY.

Dippers, male:							
North Atlantic	8	10	10	46.50	46.50	$0.5206	$0.5654
North Central	4	23	24	44.43	44.54	.5382	.5268
United States	12	33	34	45.06	45.12	.5329	.5382
Jigger men, male:							
North Atlantic	8	51	53	51.39	51.28	.4354	.4356
North Central	4	89	92	53.00	53.00	.4772	.4496
United States	12	140	145	52.41	52.37	.4620	.4445
Kiln firemen, male:							
North Atlantic	8	9	9	62.44	62.44	.3684	.3684
North Central	4	13	13	82.15	82.15	.2500	.2500
United States	12	22	22	74.09	74.09	.2984	.2984
Kiln men, male:							
North Atlantic	8	110	97	46.43	46.70	.3800	.3707
North Central	4	139	131	45.73	45.71	.4038	.4362
United States	12	249	228	46.04	46.13	.3933	.4084
Mold makers, male:							
North Atlantic	8	13	13	53.15	53.15	.3868	.3833
North Central	4	20	20	52.40	52.40	.3452	.3461
United States	12	33	33	52.70	52.70	.3616	.3607
Pressers, male:							
North Atlantic	8	183	208	52.72	52.68	.4354	.4445
North Central	4	97	84	53.00	53.00	.3737	.3619
United States	12	280	292	52.81	52.77	.4140	.4207
Sagger makers, male:							
North Atlantic	8	16	15	50.81	51.07	.5046	.4822
North Central	4	16	16	47.44	47.44	.5223	.5420
United States	12	32	31	49.13	49.19	.5134	.5131
Setters out, male:							
North Atlantic	8	18	18	46.22	46.22	.4867	.4915
North Central	4	22	22	45.68	45.68	.5120	.5477
United States	12	40	40	45.93	45.93	.5006	.5224

PRINTING AND BINDING, BOOK AND JOB.

Bookbinders, male:							
North Atlantic	31	271	288	53.34	52.82	$0.3440	$0.3514
South Atlantic	18	73	73	54.00	53.08	.3081	.3269
North Central	49	534	547	53.84	53.63	.3150	.3195
South Central	17	90	98	53.52	53.17	.3128	.3213
Western	17	82	87	49.56	49.64	.3946	.4165
United States	132	1,050	1,093	53.36	53.02	.3280	.3363

(a) Including all classes of sawyers.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

PRINTING AND BINDING, BOOK AND JOB—Continued.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Compositors, male:							
North Atlantic	51	889	867	50.53	50.16	$0.3614	$0.3712
South Atlantic	23	244	254	51.82	50.85	.3271	.3336
North Central	51	704	673	51.29	51.19	.3421	.3433
South Central	20	206	221	52.60	52.91	.3337	.3409
Western	21	148	156	49.07	48.91	.4335	.4671
United States	166	2,191	2,171	51.01	50.75	.3537	.3620
Compositors, female:							
North Atlantic	14	46	51	51.87	51.59	.2887	.3077
North Central	11	24	14	52.96	52.29	.2758	.2671
United States	25	70	65	52.24	51.74	.2843	.2989
Electrotypers, male:							
North Atlantic	10	90	92	51.54	51.63	.4216	.4239
North Central	13	93	92	52.95	51.45	.3505	.3617
Western	5	23	23	49.83	49.04	.4800	.5022
United States	28	206	207	51.99	51.26	.3960	.4050
Linotype operators, male:							
North Atlantic	24	213	205	49.49	49.42	.4545	.4581
South Atlantic	13	47	59	50.34	50.03	.4213	.4263
North Central	25	103	103	49.63	49.61	.4608	.4743
South Central	6	20	19	48.80	49.16	.4731	.4572
Western	10	34	36	47.91	47.50	.5690	.5743
United States	78	417	422	49.46	49.38	.4625	.4675
Linotype operators, female:							
North Atlantic	10	19	19	52.11	52.42	.3062	.3085
North Central	5	45	49	53.11	53.00	.2037	.2716
Western	4	12	12	46.00	45.75	.5321	.4808
United States	19	76	80	51.74	51.78	.2812	.3118
Press feeders, male:							
North Atlantic	41	425	477	52.38	52.49	.2086	.2264
South Atlantic	20	102	118	53.83	52.75	.1609	.1622
North Central	51	566	566	53.90	53.49	.1896	.1949
South Central	20	153	147	53.23	52.86	.1649	.1712
Western	21	125	134	49.06	49.05	.2366	.2498
United States	153	1,371	1,442	52.91	52.62	.1949	.2053
Press feeders, female:							
North Atlantic	19	144	142	53.95	53.96	.1265	.1244
South Atlantic	13	47	40	54.00	53.70	.1136	.1208
North Central	17	91	96	53.90	53.43	.1450	.1407
South Central	7	24	32	53.75	53.69	.0989	.1168
United States	56	306	310	53.93	53.74	.1279	.1282
Pressmen, male:							
North Atlantic	51	419	451	52.81	52.62	.3550	.3091
South Atlantic	23	72	81	53.85	52.95	.3024	.3143
North Central	53	359	352	53.94	53.52	.3384	.3517
South Central	20	69	71	53.55	52.94	.3136	.3358
Western	21	64	65	49.00	48.94	.4357	.4553
United States	168	983	1,020	53.10	52.75	.3475	.3619
Proof readers, male:							
North Atlantic	27	110	108	50.15	49.81	.4101	.4197
South Atlantic	9	15	16	53.67	51.88	.3258	.3402
North Central	19	33	43	52.91	51.33	.3815	.4022
South Central	4	4	4	53.50	53.50	.3598	.3481
Western	5	7	7	48.86	48.86	.4096	.4275
United States	64	169	178	51.03	50.41	.3958	.4071

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

PRINTING AND BINDING, BOOK AND JOB—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Proof readers, female:							
North Atlantic	19	25	29	52.44	51.72	$0.2928	$0.3195
South Atlantic	4	6	6	54.00	54.00	.1636	.1713
North Central	15	35	32	52.40	52.03	.2736	.2800
South Central	6	6	7	53.17	51.14	.2388	.2789
Western	4	5	6	50.40	49.50	.3099	.3930
United States	48	77	80	52.47	51.98	.2709	.2945
Sewers and stitchers, book, female: (a)							
North Atlantic	33	238	241	53.34	52.98	.1269	.1306
South Atlantic	20	125	130	53.79	52.82	.0994	.1073
North Central	47	400	465	53.81	53.63	.1180	.1219
South Central	18	157	186	53.07	53.05	.1069	.1067
Western	19	135	137	49.79	49.58	.1525	.1663
United States	137	1,055	1,159	53.08	52.83	.1206	.1249

PRINTING, NEWSPAPER.

Compositors, male:							
North Atlantic	46	811	842	46.97	47.08	$0.5006	$0.5140
South Atlantic	24	271	287	47.21	44.88	.4711	.5069
North Central	45	676	740	47.19	47.11	.5148	.5281
South Central	19	239	240	48.46	48.52	.5037	.5060
Western	17	235	248	46.48	46.66	.6124	.6363
United States	151	2,232	2,357	47.17	46.92	.5135	.5296
Linotype operators, male:							
North Atlantic	45	780	756	46.56	46.46	.5557	.5641
South Atlantic	23	252	264	44.00	44.64	.5560	.5745
North Central	46	698	705	47.32	47.22	.5336	.5455
South Central	19	208	209	47.79	47.74	.6391	.6451
Western	17	258	260	46.35	46.73	.6237	.6653
United States	150	2,196	2,194	46.67	46.64	.5646	.5791
Pressmen, male:							
North Atlantic	46	407	428	46.66	46.47	.4645	.4871
South Atlantic	24	74	79	48.11	48.44	.3717	.3721
North Central	46	387	404	49.68	48.52	.4024	.4195
South Central	18	33	39	52.73	52.41	.4312	.4233
Western	17	102	116	48.75	47.56	.4754	.5344
United States	151	1,003	1,066	48.34	47.73	.4337	.4558
Stereotypers, male:							
North Atlantic	45	260	258	45.89	45.64	.5285	.5367
South Atlantic	20	55	54	46.80	46.56	.4067	.4466
North Central	44	200	207	48.93	48.73	.4296	.4380
South Central	17	33	33	51.42	51.36	.3973	.4200
Western	17	59	65	50.03	48.74	.5027	.5467
United States	143	607	617	47.68	47.39	.4752	.4905

SHIPBUILDING.

Blacksmiths, male:							
North Atlantic	16	110	134	54.92	55.13	$0.3093	$0.3066
South Atlantic	7	87	113	57.52	57.77	.2738	.2753
North Central	4	32	33	58.72	56.58	.2956	.3095
Western	3	45	36	53.87	53.83	.3833	.3995
United States	30	274	316	56.01	56.29	.3086	.3063

(a) Sewers and stitchers are reported separately in the Nineteenth Annual Report of this Bureau and in Bulletins 59, 65, and 71.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

SHIPBUILDING—Continued.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Boiler makers, male:							
North Atlantic	10	340	349	54.16	54.09	$0.2876	$0.2957
South Atlantic	7	300	339	58.36	58.67	.2589	.2622
North Central	4	76	71	59.46	59.11	.3048	.3125
Western	3	61	62	54.00	54.00	.4274	.4702
United States	24	777	821	56.29	56.41	.2892	.2965
Calkers, iron, male:							
North Atlantic	8	289	235	55.74	55.49	.2732	.2810
South Atlantic	4	54	75	54.28	54.23	.2332	.2305
North Central	4	96	77	57.56	57.66	.2995	.3532
Western	2	68	41	54.00	54.00	.3554	.4257
United States	18	507	428	55.70	55.52	.2849	.2990
Calkers, wood, male:							
North Atlantic	16	323	289	52.76	51.26	.3551	.3700
South Atlantic	4	80	75	54.15	54.32	.3005	.2997
North Central	1	9	10	54.00	54.00	.3100	.3300
Western	2	12	12	49.00	49.00	.5958	.7000
United States	23	424	386	52.94	51.85	.3506	.3656
Carpenters, male:							
North Atlantic	21	1,143	1,256	53.88	52.64	.3146	.3340
South Atlantic	8	460	441	57.25	57.13	.2746	.2815
North Central	4	170	200	58.55	58.41	.3000	.3087
Western	4	176	156	52.81	53.23	.4329	.4569
United States	37	1,949	2,053	54.99	54.21	.3146	.3296
Drillers, male:							
North Atlantic	9	304	280	55.92	55.73	.2368	.2536
South Atlantic	5	83	127	56.29	56.02	.1791	.1775
North Central	4	155	120	56.94	56.85	.2082	.2359
Western	2	94	78	54.00	54.00	.2823	.3016
United States	20	696	605	55.93	55.79	.2297	.2403
Fitters, male:							
North Atlantic	10	302	268	55.19	55.07	.2608	.2700
South Atlantic	5	423	374	58.39	58.05	.2437	.2526
North Central	4	133	132	56.98	57.73	.2736	.2960
Western	2	95	91	54.00	54.00	.4036	.4123
United States	21	953	865	56.74	56.65	.2692	.2814
Joiners, male:							
North Atlantic	14	400	506	55.53	55.15	.2988	.3063
South Atlantic	6	298	373	57.01	57.02	.2759	.2765
North Central	3	84	99	59.00	58.30	.2995	.3172
Western	4	194	140	53.72	53.66	.4305	.4458
United States	27	976	1,118	55.92	55.87	.3181	.3148
Laborers, male:							
North Atlantic	19	1,205	1,568	55.54	55.58	.1677	.1756
South Atlantic	8	1,096	1,149	56.81	56.68	.1356	.1418
North Central	4	1,446	1,499	58.02	59.00	.1605	.1755
Western	4	427	90	53.90	53.60	.2204	.2309
United States	35	4,174	4,306	56.56	57.02	.1622	.1677
Machinists, male:							
North Atlantic	12	1,030	1,075	55.16	55.05	.2707	.2787
South Atlantic	7	781	791	58.36	57.88	.2683	.2794
North Central	4	313	275	59.32	59.04	.2869	.3032
Western	3	479	303	54.00	54.00	.3709	.3928
United States	26	2,603	2,444	56.41	56.28	.2915	.2958

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

SHIPBUILDING—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1904.	1907.	1906.	1907.	1906.	1907.
Molders, iron, male:							
North Atlantic	3	82	67	56.07	55.28	$0.2870	$0.2907
South Atlantic	4	160	166	57.38	57.43	.2876	.2971
North Central	2	92	74	55.37	55.14	.3266	.3466
Western	2	69	39	54.00	54.00	.4358	.4397
United States	11	403	346	56.07	56.14	.3218	.3225
Painters, male:							
North Atlantic	13	454	407	54.85	54.72	.2687	.2814
South Atlantic	6	337	308	55.95	56.36	.2425	.2471
North Central	3	22	71	59.18	57.30	.2410	.2246
Western	2	52	46	54.00	54.00	.3025	.3279
United States	24	865	832	55.34	55.51	.2598	.2664
Pattern makers, male:							
North Atlantic	11	98	105	55.92	55.79	.3226	.3235
South Atlantic	5	70	92	57.69	58.11	.3162	.3346
North Central	3	25	19	59.16	59.00	.3384	.3487
Western	2	32	20	54.00	54.00	.4747	.5073
United States	21	225	236	56.56	56.80	.3440	.3454
Riggers, male:							
North Atlantic	10	311	336	55.57	55.19	.2064	.2163
South Atlantic	5	46	49	56.15	55.86	.2366	.2361
North Central	3	29	40	56.69	56.10	.2183	.2281
Western	5	63	70	50.57	52.29	.4892	.4039
United States	23	449	495	55.00	54.92	.2499	.2458
Riveters, male:							
North Atlantic	9	310	312	55.19	54.85	.3345	.3375
South Atlantic	5	459	430	58.56	58.15	.2280	.2294
North Central	3	240	235	57.10	56.94	.2722	.3498
Western	2	233	227	54.00	54.00	.3097	.3689
United States	19	1,242	1,204	56.58	56.28	.2784	.3072

SILK GOODS.

Beamers, male:							
North Atlantic	8	37	35	56.97	56.89	$0.1887	$0.1938
Doublers, female:							
North Atlantic	11	145	133	57.69	57.17	.1055	.1163
Dyers, male:							
North Atlantic	6	1,235	1,279	55.64	55.66	.1954	.1902
Loom fixers, male:							
North Atlantic	15	176	191	58.15	58.03	.2656	.2768
Pickers, female:[a]							
North Atlantic	13	380	424	58.18	57.76	.1185	.1274
Quillers, female:							
North Atlantic	15	441	407	57.74	57.75	.0918	.0984
Spinners, male:							
North Atlantic	6	184	163	58.02	56.74	.1017	.1035
Spinners, female:							
North Atlantic	3	45	78	58.91	58.44	.1035	.1136
Twisters-in, male:							
North Atlantic	13	124	132	57.91	57.92	.2391	.2564
Warpers, male:							
North Atlantic	6	82	68	56.27	56.37	.2403	.2505
Warpers, female:							
North Atlantic	13	604	610	58.12	57.70	.1563	.1663
Weavers, male:							
North Atlantic	12	915	913	57.66	57.68	.2086	.2177
Weavers, female:							
North Atlantic	14	2,049	2,001	58.33	58.02	.1543	.1700
Weavers, ribbon, male:							
North Atlantic	4	325	372	56.14	56.16	.2543	.2813

[a] Not including warp pickers.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

SILK GOODS—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Weavers, ribbon, female:							
North Atlantic	3	139	175	57.33	57.01	$0.1916	$0.2084
Winders, female:							
North Atlantic	16	983	892	58.29	58.11	.1042	.1135

SLAUGHTERING AND MEAT PACKING.

Back skinners, cattle, male:							
North Central	12	26	24	(a)	(a)	$0.4404	$0.4396
Dry salters, male:							
North Central	14	469	473	59.94	59.94	.1834	.1880
Gutters, cattle, male:							
North Central	12	26	24	(a)	(a)	.2615	.2613
Gutters, hog, male:							
North Central	14	35	36	(a)	(a)	.2896	.2877
Headers, cattle, male:							
North Central	11	28	28	(a)	(a)	.3278	.3346
Headers, hog, male:							
North Central	15	16	15	(a)	(a)	.2809	.2897
Laborers, male:							
North Central	15	10,979	11,288	(a)	(a)	.1707	.1755
Picklers, male:							
North Central	14	619	590	60.00	60.00	.1807	.1849
Rump skinners, cattle, male:							
North Central	10	20	19	(a)	(a)	.3779	.3750
Scrapers, hog, male:							
North Central	12	58	59	(a)	(a)	.2309	.2276
Side skinners, cattle, male:							
North Central	12	68	64	(a)	(a)	.4846	.4849
Splitters, cattle, male:							
North Central	13	46	42	(a)	(a)	.4717	.4859
Splitters, hog, male:							
North Central	15	37	36	(a)	(a)	.3122	.3083
Stickers, cattle, male:							
North Central	11	18	17	(a)	(a)	.3139	.3118
Stickers, hog, male:							
North Central	15	15	15	(a)	(a)	.3043	.3027

STREETS AND SEWERS, CONTRACT WORK.

Laborers, male:							
North Atlantic	39	5,319	5,139	57.32	57.02	$0.1751	$0.1823
South Atlantic	20	1,651	1,609	55.08	54.08	.1681	.1748
North Central	40	4,196	3,979	58.06	57.77	.2075	.2203
South Central	16	1,471	1,241	58.14	58.02	.1693	.1796
Western	16	2,163	2,104	50.75	50.77	.2754	.2767
United States	131	14,800	14,072	56.40	56.05	.1976	.2060

STREETS AND SEWERS, MUNICIPAL WORK.

Laborers, male:							
North Atlantic	22	9,374	10,480	48.68	48.13	$0.2292	$0.2442
South Atlantic	10	2,499	2,971	51.66	51.38	.1793	.1855
North Central	22	10,419	11,366	48.20	48.23	.2285	.2364
South Central	10	1,572	1,648	52.73	53.47	.1836	.1904
Western	8	1,283	1,714	48.00	46.77	.2719	.3213
United States	72	25,147	28,179	49.00	48.74	.2233	.2364

(a) Not reported; working hours are irregular, depending upon amount of work to be done each day.

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Continued.

TOBACCO, CIGARS.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Bunch makers, hand, male:							
North Atlantic	5	59	51	54.81	55.37	$0.2565	$0.2650
South Atlantic	2	43	27	56.09	53.19	.1959	.2012
North Central	4	49	71	49.67	49.80	.2308	.2357
South Central	2	10	7	52.40	54.00	.2006	.1791
United States	13	161	156	53.44	52.40	.2290	.2368
Bunch makers, hand, female:							
North Atlantic	10	519	536	56.70	56.84	.1852	.1890
South Atlantic	3	148	123	54.00	51.80	.1517	.1737
North Central	6	139	147	50.10	50.24	.2220	.2129
South Central	1	17	14	46.00	46.00	.1390	.1551
United States	20	823	820	54.88	54.72	.1844	.1904
Bunch makers, machine, female:							
North Atlantic	9	385	396	53.17	53.77	.1645	.1501
North Central	2	103	98	51.70	51.82	.1715	.1795
United States	11	488	494	52.86	53.38	.1660	.1559
Cigar makers, male:							
North Atlantic	14	858	863	49.02	48.94	.3483	.3601
South Atlantic	9	2,382	2,237	59.85	59.86	.3015	.2961
North Central	15	454	462	47.19	47.10	.3196	.3331
South Central	2	114	124	48.95	48.87	.2742	.3048
United States	40	3,808	3,686	55.58	55.34	.3134	.3160
Cigar rollers, hand, male:							
North Atlantic	5	170	153	50.08	50.71	.2700	.2740
South Atlantic	2	47	35	55.15	53.60	.2100	.2295
North Central	6	71	88	49.86	49.93	.2483	.2541
South Central	1	20	25	54.00	54.00	.1766	.1639
United States	14	308	301	51.06	51.09	.2498	.2538
Cigar rollers, hand, female:							
North Atlantic	12	675	594	54.06	53.66	.1827	.1849
South Atlantic	3	253	319	56.87	57.16	.1523	.1340
North Central	8	314	346	50.27	50.29	.1932	.1897
South Central	1	26	21	46.00	46.00	.1283	.1358
United States	24	1,268	1,280	53.52	53.50	.1781	.1727
Cigar rollers, machine, female:							
North Atlantic	9	1,002	1,027	55.85	55.86	.1589	.1628
South Atlantic	1	69	70	48.00	48.00	.1620	.1855
North Central	1	125	133	52.50	52.50	.1523	.1430
South Central	1	239	207	60.00	57.00	.1010	.1123
United States	12	1,435	1,437	55.87	55.33	.1488	.1548
Packers, male:							
North Atlantic	21	149	141	47.56	47.98	.3949	.3997
South Atlantic	8	125	116	59.21	59.04	.6557	.5892
North Central	13	53	60	48.11	48.15	.3822	.3713
South Central	2	11	10	50.18	49.80	.4082	.4076
United States	44	338	327	52.04	51.99	.4898	.4619
Packers, female:							
North Atlantic	10	283	307	55.00	54.97	.1293	.1388
South Atlantic	2	45	52	54.93	55.85	.1376	.1273
North Central	7	60	52	45.98	46.08	.1684	.2119
South Central	3	42	42	58.76	56.05	.1641	.1625
United States	22	430	453	54.10	54.15	.1390	.1480

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TABLE I.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, BY OCCUPATIONS AND GEOGRAPHICAL DIVISIONS—Concluded.

TOBACCO, CIGARS—Concluded.

Occupation and geographical division.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Stemmers, male:							
North Atlantic	8	74	68	51.14	52.03	$0.1416	$0.1508
South Atlantic	5	42	45	53.38	52.49	.1319	.1355
North Central	2	8	12	47.50	47.00	.2150	.1956
South Central	2	11	13	54.73	54.92	.0994	.1025
United States	17	135	138	51.91	52.01	.1395	.1452
Stemmers, female:							
North Atlantic	23	1,052	1,052	53.41	53.32	.1088	.1137
South Atlantic	9	286	296	58.74	58.95	.1210	.1062
North Central	17	378	421	50.41	50.41	.1039	.1061
South Central	3	86	69	56.09	55.17	.0779	.0939
United States	52	1,802	1,838	53.76	53.63	.1082	.1100

WOOLEN AND WORSTED GOODS.

Burlers, female:							
North Atlantic	29	770	1,035	58.31	57.89	$0.1092	$0.1153
Carders, male:							
North Atlantic	24	198	200	58.73	58.49	.1213	.1290
Card strippers, male:							
North Atlantic	15	83	79	58.08	57.95	.1324	.1355
Combers, male:							
North Atlantic	7	170	159	59.20	58.57	.1219	.1239
Combers, female:							
North Atlantic	5	140	126	56.62	56.21	.0948	.0958
Dyers, male:							
North Atlantic	25	657	677	59.43	58.91	.1408	.1500
Loom fixers, male:							
North Atlantic	29	333	347	58.38	57.99	.2546	.2674
Spinners, frame, male:							
North Atlantic	4	25	67	58.32	57.70	.0961	.1159
Spinners, frame, female:							
North Atlantic	9	747	739	58.68	58.00	.1065	.1185
Spinners, mule, male:							
North Atlantic	23	330	352	58.57	58.45	.2027	.2066
Weavers, male:							
North Atlantic	27	1,444	1,683	58.73	58.51	.2025	.2116
Weavers, female:							
North Atlantic	27	2,201	1,999	58.18	58.07	.1697	.1841

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS.

[For explanation of relative figures, see page 18.]

AGRICULTURAL IMPLEMENTS.

BLACKSMITHS, Male.

[Data from 15 establishments 1890–1904; 24, 1905, 1906; 23, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	90.5	100.8	98.4
1891	91.3	100.8	101.3
1892	104.0	100.8	105.6
1893	104.8	100.8	115.4
1894	98.4	96.4	100.0
1895	96.0	100.8	90.9
1896	100.8	100.8	95.4
1897	97.6	97.5	95.8
1898	110.3	100.8	101.7
1899	107.1	100.4	95.2
1900	113.5	100.5	96.5
1901	114.3	100.4	95.3
1902	106.3	100.4	100.2
1903	112.7	99.2	104.7
1904	119.5	100.0	106.2
1905	136.9	99.9	109.6
1906	148.8	99.9	114.9
1907	134.6	100.9	125.1

FITTERS, Male.

[Data from 1 establishment 1890–1903; 10, 1904; 19, 1905, 1906; 20, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	111.1	100.0	92.7
1891	88.9	100.0	90.3
1892	88.9	100.0	98.6
1893	100.0	100.0	100.0
1894	100.0	100.0	100.7
1895	88.9	100.0	102.7
1896	77.8	100.0	121.5
1897	100.0	100.0	93.4
1898	122.2	100.0	96.4
1899	111.1	100.0	103.8
1900	111.1	100.0	102.1
1901	122.2	100.0	129.6
1902	111.1	100.0	135.3
1903	100.0	100.0	134.8
1904	80.0	96.3	144.7
1905	85.7	96.2	152.7
1906	103.2	95.4	151.1
1907	90.1	95.1	155.8

GRINDERS, Male.

[Data from 1 establishment 1890–1903; 8, 1904; 17, 1905; 19, 1906; 20, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	47.1	100.0	84.8
1891	70.6	100.0	99.4
1892	82.4	100.0	84.9
1893	105.9	100.0	79.4
1894	94.1	100.0	100.8
1895	105.9	100.0	99.2
1896	94.1	100.0	107.9
1897	94.1	100.0	120.8
1898	164.7	100.0	113.0
1899	158.8	100.0	109.6
1900	176.5	100.0	114.5
1901	147.1	100.0	105.6
1902	70.6	100.0	108.4
1903	70.6	100.0	123.0
1904	69.9	97.8	136.9
1905	78.0	97.8	138.8
1906	83.1	97.5	140.0
1907	82.6	97.2	141.0

MACHINE WOODWORKERS, Male.

[Data from 11 establishments 1890–1903; 16, 1904; 23, 1905, 1906; 22, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	93.0	100.3	101.5
1891	89.8	100.2	102.8
1892	95.3	100.2	101.8
1893	110.9	100.2	104.9
1894	86.7	100.1	99.2
1895	98.4	100.2	96.2
1896	90.6	100.2	96.4
1897	91.4	98.3	99.1
1898	112.5	100.3	99.7
1899	128.9	100.1	98.3
1900	128.1	100.1	104.0
1901	126.6	100.1	103.8
1902	130.5	100.2	110.8
1903	151.6	99.7	108.9
1904	112.7	98.4	114.2
1905	140.4	98.3	117.8
1906	138.7	97.9	119.9
1907	133.2	97.6	120.5

MACHINISTS, Male.

[Data from 15 establishments 1890–1903; 14, 1904; 21, 1905, 1906; 20, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	97.9	100.5	100.3
1891	98.8	100.4	102.1
1892	98.5	100.4	104.0
1893	107.1	100.4	106.6
1894	93.8	97.8	94.5
1895	94.1	100.5	93.7
1896	100.0	100.4	96.4
1897	91.7	99.1	96.6
1898	105.6	100.4	101.3
1899	113.0	100.1	104.6
1900	123.9	100.1	106.2
1901	128.6	100.1	104.8
1902	124.5	100.0	107.7
1903	146.6	97.8	111.9
1904	122.3	93.9	120.4
1905	140.3	93.0	119.8
1906	139.2	92.4	127.4
1907	141.1	92.1	128.8

MOLDERS, IRON, Male.

[Data from 9 establishments 1890–1903; 12, 1904; 21, 1905, 1906; 20, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	86.4	100.9	102.3
1891	88.9	100.9	103.6
1892	104.0	101.0	106.3
1893	109.1	100.9	107.9
1894	87.4	99.1	96.0
1895	95.5	100.7	93.3
1896	90.9	98.3	98.1
1897	91.9	97.0	94.0
1898	117.2	100.4	96.7
1899	127.8	100.7	101.6
1900	132.8	100.9	109.2
1901	126.8	100.8	108.6
1902	121.7	100.8	119.8
1903	141.4	100.1	120.4
1904	129.2	98.2	121.2
1905	152.3	98.1	117.2
1906	165.4	97.7	122.5
1907	165.6	97.3	121.6

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

AGRICULTURAL IMPLEMENTS—Concluded.

PAINTERS, Male.

[Data for employees from 12 establishments 1890–1903. Data for hours and wages from 12 establishments 1890–1894; 13, 1895–1903. Data from 15 establishments 1904; 23, 1905, 1907; 22, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	87.4	99.9	97.6
1891	91.6	99.9	108.8
1892	89.9	100.1	106.5
1893	98.3	100.1	104.6
1894	113.4	100.2	91.8
1895	100.8	100.0	97.1
1896	101.7	99.8	99.4
1897	98.3	99.8	97.8
1898	117.6	100.1	96.3
1899	103.4	100.1	99.9
1900	97.5	100.0	109.6
1901	126.9	100.1	107.4
1902	126.1	100.2	110.2
1903	121.0	100.0	120.8
1904	105.6	95.9	118.5
1905	120.0	95.4	121.3
1906	108.9	95.4	126.3
1907	87.1	94.7	130.2

PATTERN MAKERS, WOOD, Male.

[Data from 13 establishments 1890–1903; 12, 1904; 22, 1905, 1906; 21, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	76.2	100.1	99.4
1891	85.7	100.1	98.4
1892	97.6	100.0	104.7
1893	109.5	100.0	101.4
1894	92.9	100.1	95.5
1895	104.8	100.0	98.1
1896	100.0	99.9	101.1
1897	97.6	100.0	97.4
1898	116.7	99.8	103.2
1899	114.3	99.9	101.0
1900	161.9	99.9	104.0
1901	154.8	99.9	105.6
1902	135.7	100.0	109.7
1903	154.8	98.6	112.8
1904	128.7	98.2	118.0
1905	135.9	98.0	118.1
1906	175.9	97.6	130.4
1907	178.5	97.0	132.3

BAKERY, BREAD.

BAKERS, Male.

[Data from 123 establishments 1890–1903; 140, 1904; 150, 1905; 148, 1906; 153, 1907.]

Average 1890–99	100.0	100.0	100.0	1899	109.8	97.8	103.1
1890	93.3	100.8	99.3	1900	114.0	96.9	106.6
1891	94.6	100.8	99.9	1901	121.0	96.3	108.8
1892	96.1	100.9	100.3	1902	130.4	95.8	113.9
1893	96.0	100.5	100.2	1903	133.7	93.9	118.9
1894	97.2	100.4	98.4	1904	142.6	93.6	121.1
1895	100.2	99.9	98.7	1905	148.1	92.5	123.5
1896	102.1	99.6	99.6	1906	155.6	91.8	127.4
1897	102.6	100.2	99.8	1907	159.6	91.6	128.9
1898	107.9	99.1	100.6				

BLACKSMITHING AND HORSESHOEING.

BLACKSMITHS, Male.

[Data from 59 establishments 1890–1903; 48, 1904; 33, 1905; 31, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	100.0	100.2	100.1
1891	102.8	100.2	100.3
1892	102.8	100.0	101.0
1893	103.5	99.9	100.7
1894	94.4	99.9	98.6
1895	95.1	100.0	98.2
1896	101.4	99.9	98.5
1897	97.2	100.0	99.9
1898	102.8	99.9	101.1
1899	102.1	100.1	101.5
1900	105.6	99.4	102.5
1901	109.2	99.3	104.1
1902	107.7	98.3	107.6
1903	107.7	97.9	109.9
1904	101.1	97.4	108.9
1905	102.2	97.2	108.6
1906	107.9	96.2	112.9
1907	109.1	95.2	121.6

HORSESHOERS, FLOOR MEN, Male.

[Data from 109 establishments 1890–1903; 127, 1904; 134, 1905; 139, 1906; 141, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	105.7	102.0	98.1
1891	101.9	101.9	97.6
1892	103.4	101.9	97.8
1893	101.1	100.8	98.4
1894	100.4	99.3	101.1
1895	96.6	99.2	99.9
1896	97.7	99.2	100.5
1897	95.5	98.9	101.1
1898	98.9	98.6	102.3
1899	99.6	98.2	103.1
1900	101.5	97.7	104.9
1901	102.3	96.7	106.6
1902	100.4	96.0	107.8
1903	100.0	95.6	113.4
1904	98.3	95.1	116.8
1905	101.4	94.5	119.9
1906	106.3	94.1	123.4
1907	106.0	93.8	129.5

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TABLE 11.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

BLACKSMITHING AND HORSESHOEING—Concluded.

HORSESHOERS, FORGEMEN, Male.

[Data from 69 establishments 1890-1903; 95, 1904; 100, 1905; 133, 1906; 135, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0	1899	99.3	97.9	104.8
1890	102.9	101.3	98.6	1900	97.1	96.9	107.9
1891	102.9	101.1	98.5	1901	99.3	96.6	109.8
1892	102.1	101.1	98.5	1902	97.9	95.5	111.6
1893	100.7	100.9	97.9	1903	96.4	94.9	114.8
1894	99.3	100.0	98.3	1904	96.4	94.7	115.8
1895	97.9	99.8	98.8	1905	94.4	94.2	117.7
1896	98.6	99.7	100.1	1906	94.8	93.8	120.7
1897	97.1	99.3	101.2	1907	93.7	93.4	125.1
1898	100.0	98.9	103.0				

BOOTS AND SHOES.

CLOSERS-ON, Female.

[Data for employees from 15 establishments 1890-1903. Data for hours and wages from 15 establishments 1890; 17, 1891, 1892; 18, 1893; 20, 1894; 24, 1895; 25, 1896; 26, 1897; 28, 1898; 32, 1899; 33, 1900, 1901; 34, 1902, 1903. Data from 40 establishments 1904; 44, 1905, 1906; 46, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	87.3	100.3	90.7
1891	83.1	100.5	96.8
1892	87.3	99.9	98.3
1893	90.1	100.1	100.4
1894	108.5	100.1	103.6
1895	100.0	99.6	98.4
1896	111.3	99.7	103.3
1897	114.1	99.7	105.2
1898	107.0	100.4	100.1
1899	116.9	99.7	102.9
1900	111.3	99.5	102.4
1901	116.9	99.3	105.5
1902	114.4	99.4	103.4
1903	129.6	98.8	108.4
1904	131.8	98.9	106.1
1905	122.2	98.8	109.0
1906	137.2	98.4	111.1
1907	149.4	96.9	112.3

CUTTERS, OUTSOLE, Male.

[Data for employees from 26 establishments 1890-1903. Data for hours and wages from 26 establishments 1890; 27, 1891; 28, 1892; 29, 1893, 1894; 30, 1895, 1896; 31, 1897; 32, 1898, 1899; 33, 1900-1903. Data from 37 establishments 1904; 35, 1905; 36, 1906; 38, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	88.7	100.2	102.0
1891	94.8	101.7	99.5
1892	97.4	100.2	99.1
1893	98.3	99.8	100.1
1894	87.8	99.7	96.8
1895	93.9	99.8	100.2
1896	104.3	99.7	98.8
1897	117.4	99.6	101.2
1898	107.8	99.7	101.4
1899	113.0	99.7	100.6
1900	114.8	99.8	102.2
1901	121.7	99.6	100.5
1902	125.2	99.6	103.5
1903	140.0	98.2	106.0
1904	133.9	98.6	109.2
1905	139.6	98.5	109.9
1906	142.2	98.0	111.9
1907	144.7	98.0	114.3

CUTTERS, UPPER, Male.

[Data for employees from 22 establishments 1890-1903. Data for hours and wages from 22 establishments 1890; 23, 1891; 25, 1892; 27, 1893; 28, 1894; 31, 1895, 1896; 32, 1897; 33, 1898; 37, 1899; 39, 1900-1903. Data from 42 establishments 1904; 45, 1905, 1906; 47, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	76.0	100.1	99.9
1891	82.0	100.2	99.4
1892	94.7	100.2	99.8
1893	95.2	100.2	100.4
1894	96.3	100.0	98.0
1895	99.8	99.8	100.0
1896	105.5	100.0	99.1
1897	113.6	99.9	101.0
1898	118.0	100.0	99.7
1899	119.6	99.7	102.8
1900	129.1	99.7	103.3
1901	142.3	99.8	102.6
1902	136.5	98.4	107.4
1903	144.3	96.6	110.8
1904	154.5	96.9	114.2
1905	162.1	96.2	117.3
1906	172.8	95.8	118.8
1907	164.4	95.5	126.8

EDGE TRIMMERS, Male.

[Data for employees from 18 establishments 1890-1903. Data for hours and wages from 18 establishments 1890; 20, 1891; 21, 1892; 23, 1893; 24, 1894; 27, 1895, 1896; 28, 1897; 30, 1898; 33, 1899; 34, 1900; 35, 1901-1903. Data from 41 establishments 1904; 45, 1905, 1906; 46, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	74.2	100.8	97.7
1891	76.4	100.8	97.2
1892	86.5	101.0	99.2
1893	96.6	100.8	105.1
1894	102.2	99.8	99.2
1895	100.0	99.5	103.1
1896	112.4	99.7	99.2
1897	114.6	99.9	100.4
1898	111.2	98.5	99.9
1899	120.2	99.2	99.0
1900	123.6	98.2	105.3
1901	138.2	99.2	105.0
1902	134.8	97.3	110.1
1903	140.4	95.8	114.7
1904	151.2	95.7	116.4
1905	162.4	95.6	118.7
1906	188.2	94.9	118.9
1907	176.2	95.1	127.1

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

BOOTS AND SHOES—Continued.

GOODYEAR STITCHERS, Male.

[Data for employees from 10 establishments 1890–1903. Data for hours and wages from 10 establishments 1890; 12, 1891; 13, 1892; 14, 1893; 15, 1894; 19, 1895, 1896; 21, 1897; 22, 1898; 25, 1899; 27, 1900, 1901; 29, 1902; 30, 1903. Data from 34 establishments 1904; 40, 1905, 1906; 41, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	91.7	101.3	88.6
1891	86.1	100.6	93.9
1892	86.1	100.5	96.5
1893	97.2	100.7	96.4
1894	91.7	99.5	99.6
1895	94.4	99.8	100.9
1896	105.6	99.6	98.6
1897	108.3	99.7	108.4
1898	105.6	99.5	106.6
1899	130.6	98.9	110.4
1900	150.0	98.8	115.6
1901	155.6	98.7	117.3
1902	158.3	95.1	121.7
1903	161.1	94.4	131.0
1904	181.1	94.6	133.2
1905	205.8	94.9	130.2
1906	225.9	94.2	128.1
1907	224.5	94.0	132.2

HEEL TRIMMERS, Male.

[Data for employees from 15 establishments 1890–1903. Data for hours and wages from 15 establishments 1890; 17, 1891; 18, 1892; 20, 1893; 21, 1894; 25, 1895–1897; 26, 1898; 28, 1899; 29, 1900; 30, 1901–1903. Data from 39 establishments 1904; 44, 1905, 1906; 45, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	77.1	101.6	91.9
1891	85.7	100.7	90.8
1892	94.3	100.7	97.0
1893	100.0	100.4	104.7
1894	100.0	99.7	102.3
1895	108.6	99.4	103.6
1896	108.6	99.4	101.0
1897	111.4	99.3	102.3
1898	105.7	99.6	105.0
1899	97.1	99.1	101.5
1900	102.9	97.7	104.8
1901	100.0	97.6	105.5
1902	88.6	96.7	106.9
1903	85.7	96.2	115.7
1904	93.8	95.7	122.0
1905	97.3	96.1	125.1
1906	108.7	95.0	127.4
1907	102.9	94.7	129.6

LASTERS, MACHINE, Male.

[Data for employees from 10 establishments 1890–1903. Data for hours and wages from 10 establishments 1890, 1891; 12, 1892; 14, 1893; 15, 1894; 16, 1895; 20, 1896; 23, 1897; 25, 1898; 30, 1899; 31, 1900; 32, 1901; 33, 1902, 1903. Data from 37 establishments 1904; 44, 1905, 1906; 46, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	59.8	99.5	97.3
1891	67.7	100.2	98.1
1892	77.2	100.0	101.2
1893	86.6	99.8	96.1
1894	102.4	100.6	101.3
1895	117.3	100.5	101.1
1896	126.0	100.5	103.9
1897	120.5	100.0	97.6
1898	100.0	98.6	103.9
1899	138.6	100.3	100.6
1900	148.8	98.8	103.0
1901	134.6	99.9	106.6
1902	126.8	98.5	114.4
1903	148.8	97.8	120.1
1904	171.9	98.0	125.4
1905	188.1	98.0	128.0
1906	193.3	97.6	132.4
1907	202.8	96.6	135.2

McKAY STITCHERS, Male.

[Data for employees from 14 establishments 1890–1903. Data for hours and wages from 14 establishments 1890; 16, 1891; 17, 1892; 19, 1893; 20 1894–1896; 21, 1897; 23, 1898; 24, 1899; 25, 1900; 26, 1901–1903. Data from 28 establishments 1904; 31, 1905; 32, 1906; 33, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	77.8	101.6	95.0
1891	80.0	101.5	94.1
1892	104.4	100.4	99.3
1893	104.4	100.4	104.4
1894	102.2	99.8	100.6
1895	111.1	100.2	104.3
1896	117.8	99.8	98.9
1897	104.4	99.1	101.2
1898	102.2	98.5	102.6
1899	100.0	98.6	99.6
1900	97.8	96.4	99.9
1901	106.7	98.0	99.1
1902	97.8	96.7	100.7
1903	86.7	96.6	103.6
1904	86.7	96.3	103.5
1905	93.2	95.8	102.2
1906	97.7	95.7	104.3
1907	92.0	95.2	101.0

TREERS, Male.

[Data for employees from 13 establishments 1890–1903. Data for hours and wages from 13 establishments 1890, 1891; 14, 1892; 15, 1893, 1894; 16, 1895, 1896; 17, 1897–1899; 19, 1900–1903. Data from 28 establishments 1904; 33, 1905; 34, 1906; 35 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0	1899	102.9	99.7	102.6
1890	64.2	100.1	101.4	1900	105.1	99.6	107.9
1891	83.2	100.7	97.4	1901	108.8	99.8	105.5
1892	78.8	99.4	98.8	1902	91.2	98.2	110.0
1893	108.0	99.0	100.4	1903	94.2	96.0	123.4
1894	102.9	99.7	101.4	1904	93.6	95.9	123.3
1895	107.3	100.9	100.9	1905	106.0	95.9	126.0
1896	121.9	100.3	101.6	1906	122.2	95.2	122.3
1897	114.6	99.9	97.9	1907	115.8	95.5	135.6
1898	113.1	100.3	97.7				

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

BOOTS AND SHOES—Concluded.

VAMPERS, Male.

Data for employees from 1 establishment 1890–1903. Data for hours and wages from 1 establishment 1890; 2, 1891, 1892; 4, 1893, 1896; 5, 1894, 1895, 1897, 1898; 7, 1899, 1900; 9, 1901; 11, 1902; 10, 1903. Data from 16 establishments 1904; 19, 1905, 1906; 21, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	50.0	95.8	112.3
1891	50.0	101.9	97.3
1892	50.0	102.4	92.4
1893	100.0	100.2	95.6
1894	100.0	99.7	89.4
1895	100.0	99.8	90.7
1896	100.0	100.0	101.5
1897	100.0	100.2	111.4
1898	150.0	100.3	103.0
1899	150.0	99.5	106.7
1900	150.0	100.5	110.6
1901	150.0	100.1	106.0
1902	150.0	99.4	114.7
1903	150.0	93.9	127.1
1904	226.2	96.3	124.4
1905	277.1	96.5	120.4
1906	322.7	96.1	127.5
1907	374.0	96.4	128.2

VAMPERS, Female.

[Data for employees from 16 establishments 1890–1903. Data for hours and wages from 16 establishments 1890; 18, 1891; 19, 1892; 20, 1893; 22, 1894; 26, 1895, 1896; 27, 1897; 29, 1898; 33, 1899; 34, 1900, 1901; 35, 1902; 33, 1903. Data from 40 establishments 1904; 45, 1905; 46, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	102.6	100.4	99.9
1891	91.4	100.2	93.7
1892	94.0	100.4	98.3
1893	92.2	100.1	101.6
1894	94.8	99.9	102.3
1895	102.6	99.9	103.2
1896	101.7	99.6	102.0
1897	105.2	99.5	100.8
1898	103.4	100.1	99.4
1899	113.8	99.8	98.5
1900	121.6	99.7	103.0
1901	130.2	99.6	103.9
1902	140.5	99.2	104.5
1903	153.4	98.5	110.5
1904	157.4	98.5	110.7
1905	155.4	98.6	115.4
1906	166.5	98.2	120.9
1907	142.1	97.8	124.9

BRICK.

BRICK-MACHINE TENDERS, Male.

[Data from 20 establishments 1890–1903; 36, 1904; 46, 1905; 47, 1906; 52, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	99.2	100.0	99.9
1891	100.8	99.9	99.6
1892	100.0	99.8	103.0
1893	98.4	100.0	101.7
1894	99.2	100.0	98.4
1895	99.2	100.0	97.8
1896	99.2	100.1	98.6
1897	99.2	100.1	97.3
1898	100.8	100.1	100.6
1899	102.4	100.1	103.2
1900	103.2	100.2	104.6
1901	101.6	100.3	106.6
1902	104.0	100.2	111.3
1903	109.5	99.5	112.9
1904	108.0	99.5	113.5
1905	107.6	99.9	112.5
1906	110.4	99.9	118.1
1907	100.6	99.2	123.0

KILN FIREMEN, Male.

[Data from 22 establishments 1890–1903; 37, 1904; 48, 1905; 47, 1906; 54, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	100.0	100.2	100.6
1891	100.0	100.2	101.2
1892	99.0	100.4	100.5
1893	101.0	100.0	100.1
1894	96.0	100.3	95.2
1895	100.0	99.5	99.1
1896	98.0	99.9	96.2
1897	102.0	99.2	102.0
1898	102.0	99.8	104.2
1899	98.0	100.6	101.1
1900	103.0	99.6	104.8
1901	106.0	99.0	109.9
1902	108.0	99.3	113.8
1903	109.0	98.6	115.9
1904	113.4	98.2	117.7
1905	115.7	98.2	118.8
1906	118.8	98.1	121.6
1907	113.1	97.7	127.6

KILN SETTERS, Male.

[Data from 24 establishments 1890–1903; 36, 1904; 44, 1905; 45, 1906; 51, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	97.0	99.7	99.2
1891	90.1	99.8	99.7
1892	95.0	99.8	104.9
1893	102.0	99.8	99.8
1894	98.0	100.1	99.5
1895	98.0	100.3	97.8
1896	102.0	99.9	97.9
1897	103.0	100.1	96.5
1898	102.0	100.2	101.9
1899	108.9	100.2	102.7
1900	105.9	100.3	102.9
1901	106.9	100.5	101.2
1902	108.9	100.4	106.9
1903	113.9	99.6	107.4
1904	108.6	99.4	107.5
1905	111.7	99.9	107.4
1906	113.6	100.0	111.3
1907	110.0	99.6	114.8

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

BRICK—Concluded.

LABORERS, Male.

[Data from 11 establishments 1890–1903; 38, 1904; 47, 1905; 49, 1906; 54, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	98.8	99.3	104.0
1891	97.4	99.8	102.2
1892	99.0	99.8	102.2
1893	102.0	100.3	100.8
1894	103.0	100.3	99.4
1895	101.6	100.3	97.1
1896	98.0	99.8	98.8
1897	98.0	99.8	98.8
1898	100.0	100.4	97.0
1899	107.2	100.1	99.3
1900	104.3	99.6	102.0
1901	105.6	99.6	103.1
1902	120.3	99.2	109.2
1903	119.0	98.5	112.9
1904	122.8	98.4	111.3
1905	120.0	98.4	114.9
1906	117.5	98.1	123.1
1907	116.6	98.1	126.4

OFFBEARERS, Male.

[Data from 19 establishments 1890–1903; 29, 1904; 40, 1905; 37, 1906; 41, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	101.3	100.0	101.5
1891	97.4	99.7	104.3
1892	105.3	100.0	104.9
1893	98.0	99.8	106.7
1894	96.0	100.0	101.0
1895	99.3	100.0	98.3
1896	100.0	100.1	95.7
1897	98.0	100.1	94.1
1898	98.7	100.1	95.5
1899	102.6	100.2	97.6
1900	94.7	99.8	101.6
1901	96.7	100.1	106.5
1902	99.3	99.8	111.1
1903	97.4	99.5	114.4
1904	97.0	99.1	113.5
1905	96.4	99.4	115.0
1906	94.7	99.3	121.0
1907	93.2	99.1	125.9

BUILDING TRADES.

BRICKLAYERS, Male.

[Data from 212 establishments 1890–1903; 229, 1904; 203, 1905; 215, 1906; 222, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	101.5	103.2	98.4
1891	112.3	102.4	99.5
1892	114.1	101.2	101.0
1893	104.1	100.1	101.1
1894	93.1	100.8	98.6
1895	88.2	100.0	99.5
1896	91.8	99.9	98.9
1897	92.1	99.1	99.4
1898	95.3	97.9	98.7
1899	107.3	95.5	104.8
1900	105.1	95.6	106.5
1901	118.1	94.3	112.0
1902	109.8	93.6	118.0
1903	116.2	92.7	124.7
1904	111.2	92.1	127.3
1905	111.8	92.0	132.1
1906	124.0	91.9	138.6
1907	115.7	91.8	140.9

CARPENTERS, Male.

[Data from 227 establishments 1890–1903; 242, 1904; 213, 1905; 216, 1906; 225, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	104.8	102.0	98.6
1891	110.2	101.3	99.2
1892	114.3	100.5	102.7
1893	97.8	100.7	99.7
1894	89.3	100.7	97.9
1895	88.8	100.3	97.8
1896	95.7	99.7	99.6
1897	95.4	99.0	100.0
1898	95.5	98.5	101.4
1899	108.2	97.4	103.2
1900	112.1	94.5	110.8
1901	117.8	92.5	115.9
1902	122.1	90.6	123.7
1903	116.4	90.2	130.6
1904	108.6	89.9	129.9
1905	108.3	90.1	133.6
1906	121.6	89.7	141.6
1907	124.7	88.9	151.9

CORNICE MAKERS, Male.

[Data from 40 establishments 1890–1903; 55, 1904; 86, 1905; 87, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	106.2	104.4	95.0
1891	105.4	101.3	97.1
1892	133.5	98.4	99.2
1893	99.8	100.6	98.8
1894	80.5	100.3	97.6
1895	85.3	100.1	98.6
1896	93.6	99.5	101.4
1897	90.1	99.0	102.9
1898	96.9	98.6	103.0
1899	108.7	97.9	106.4
1900	103.5	96.1	113.5
1901	104.1	94.5	115.6
1902	114.7	92.5	125.1
1903	117.2	91.7	134.3
1904	114.8	90.2	137.7
1905	127.1	90.3	140.8
1906	142.2	90.5	145.1
1907	144.3	90.1	150.0

GAS FITTERS, Male.

[Data from 64 establishments 1890–1903; 79, 1904; 77, 1905, 1907; 76, 1906.]

Average 1890–99	100.0	100.0	100.0
1890	99.4	103.5	95.5
1891	100.0	102.6	96.3
1892	105.6	100.6	98.9
1893	98.2	99.8	99.7
1894	96.3	99.7	99.1
1895	90.1	99.7	99.3
1896	100.6	99.4	100.0
1897	100.0	98.4	101.6
1898	106.8	99.1	103.7
1899	110.5	97.3	105.8
1900	108.0	96.4	110.0
1901	109.3	95.4	114.1
1902	114.8	92.6	123.3
1903	114.8	90.9	130.5
1904	114.4	89.4	129.1
1905	118.4	89.3	128.9
1906	124.4	88.5	150.4
1907	124.9	88.9	155.2

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

BUILDING TRADES—Continued.

HOD CARRIERS, Male.

[Data from 250 establishments 1890–1903; 262, 1904; 255, 1905; 269, 1906; 311, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	102.0	102.3	97.0
1891	109.5	101.8	96.5
1892	115.4	100.4	99.4
1893	105.0	100.1	99.8
1894	87.2	100.8	98.9
1895	90.6	99.9	99.6
1896	93.3	99.7	100.3
1897	94.2	99.7	99.7
1898	92 4	98.9	100.6
1899	110.4	96.5	108.1
1900	104.1	96.5	107.3
1901	120.2	95.6	109.3
1902	119.3	94.1	114.9
1903	123.5	93.0	122.9
1904	124.3	92.8	123.8
1905	128.1	93.0	124.7
1906	146.3	92.9	134.5
1907	131.1	92.7	135.9

INSIDE WIRE MEN, Male.

[Data from 40 establishments 1890–1903; 56, 1904; 94, 1905; 97, 1906; 101, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	74.2	102.8	89.6
1891	78.1	102.6	89.1
1892	94.5	98.8	91.6
1893	91.1	101.2	97.9
1894	93.7	101.5	96.1
1895	93.3	101.2	100.0
1896	102.7	99.3	104.5
1897	130.4	97.5	107.6
1898	122.4	97.2	112.1
1899	119.8	98.0	111.7
1900	146.7	94.7	120.7
1901	149.4	94.5	119.6
1902	176.6	92.8	129.7
1903	184.1	89.6	140.6
1904	185.8	88.2	143.5
1905	212.1	87.2	150.0
1906	251.8	87.0	152.5
1907	250.3	86.3	158.2

LABORERS, Male.

[Data from 146 establishments 1890–1903; 172, 1904; 192, 1905; 193, 1906; 190, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	114.8	100.3	102.7
1891	109.0	100.3	103.0
1892	107.9	100.3	103.5
1893	101.3	100.0	101.8
1894	92.6	99.9	96.7
1895	85.1	100.1	98.2
1896	90.1	100.1	96.5
1897	89.7	99.9	98.5
1898	101.4	99.3	99.9
1899	108.1	99.8	99.3
1900	118.3	99.0	99.6
1901	104.2	98.5	108.0
1902	119.2	96.3	112.0
1903	113.9	95.8	114.2
1904	96.8	95.8	114.3
1905	109.1	95.8	114.4
1906	130.1	95.4	122.5
1907	137.8	94 9	127.2

LATHERS, WOOD, Male.

[Data from 10 establishments 1890–1903; 39, 1904; 67, 1905; 57, 1906; 56, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	85.2	105.4	94.0
1891	81.5	105.4	93.8
1892	108.3	104.9	95.9
1893	91.7	104.8	93.8
1894	90.7	104.7	93.8
1895	110.2	103.7	97.9
1896	105.6	93.2	106.3
1897	99.1	93.2	106.2
1898	119.4	92.3	109.5
1899	109.3	92.3	108.7
1900	121.3	87.3	110.8
1901	121.3	87.9	111.2
1902	135.2	87.7	115.1
1903	114.8	88.0	111.4
1904	135.4	87.4	116.7
1905	132.9	87.2	119.3
1906	144.5	86.2	145.3
1907	143.1	86.1	140.8

PAINTERS, Male.

[Data from 203 establishments 1890–1903; 208, 1904; 206, 1905; 210, 1906; 211, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	96.3	102.6	97.0
1891	100.9	101.9	98.2
1892	105.5	101.1	99.4
1893	99.7	100.1	101.2
1894	93.9	100.4	99.1
1895	94.1	100.1	98.4
1896	99.2	99.6	99.2
1897	101.7	99.0	100.5
1898	101.3	98.1	102.3
1899	107.5	97.1	104.7
1900	111.2	94.6	110.5
1901	116.5	92.6	114.7
1902	115.7	91.5	119.5
1903	109.4	90.8	124.9
1904	109.9	90.4	127.9
1905	111.5	90.5	129.5
1906	116.2	89.7	136.8
1907	114.4	89.3	142.0

PAPER HANGERS, Male.

[Data from 93 establishments 1890–1903; 103, 1904; 116, 1905, 1907; 114, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	94.1	101.4	98.5
1891	94.9	100.9	99.3
1892	100.6	101.0	99.4
1893	93.5	100.8	98.9
1894	92.1	100.4	98.4
1895	93.5	100.5	98.5
1896	99.8	99.8	99.5
1897	105.7	99.0	101.1
1898	108.5	98.4	102.9
1899	117.8	97.9	103.7
1900	119.2	96.1	108.4
1901	127.9	92.8	113.4
1902	124.2	91.4	118.8
1903	120.4	90.2	125.7
1904	117.1	90.3	126.8
1905	129.1	89.6	133.5
1906	133.6	89.0	136.9
1907	130 2	89.1	142.7

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

BUILDING TRADES—Continued.

PLASTERERS, Male.

[Data from 146 establishments 1890–1903; 152, 1904; 164, 1905; 166, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.2	103.2	98.4
1891	106.0	101.6	99.2
1892	110.5	100.5	102.6
1893	102.4	100.3	100.5
1894	92.0	100.3	97.9
1895	92.0	99.6	98.1
1896	97.7	99.4	99.7
1897	94.4	100.3	97.6
1898	97.0	98.6	99.4
1899	108.1	96.1	106.4
1900	111.5	94.1	109.5
1901	105.2	93.1	114.3
1902	120.8	91.2	123.7
1903	112.7	90.8	131.8
1904	110.5	90.5	133.8
1905	123.8	90.1	139.6
1906	133.1	90.0	148.7
1907	141.1	89.6	153.3

PLUMBERS, Male.

[Data from 221 establishments 1890–1903; 232, 1904; 207, 1905; 215, 1906; 219, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	99.1	102.1	97.4
1891	100.3	101.6	98.1
1892	103.4	101.2	98.7
1893	99.8	100.2	99.9
1894	94.4	100.1	98.8
1895	94.3	99.7	99.7
1896	98.9	99.3	100.4
1897	99.1	98.9	101.2
1898	104.6	98.7	102.3
1899	106.2	98.2	103.6
1900	110.4	96.6	107.1
1901	118.3	95.4	110.6
1902	117.9	93.0	117.6
1903	115.7	91.9	124.5
1904	117.2	91.3	128.3
1905	124.5	91.1	131.2
1906	139.8	90.2	141.9
1907	136.7	90.0	148.1

ROOFERS, GRAVEL AND TAR, Male.

[Data from 9 establishments 1890–1903; 35, 1904; 72, 1905; 75, 1906; 81, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	82.9	100.4	97.1
1891	89.5	100.2	101.0
1892	92.1	101.3	103.6
1893	136.8	98.1	107.6
1894	76.3	100.0	98.0
1895	90.8	101.1	92.5
1896	101.3	99.9	96.5
1897	100.0	99.7	100.9
1898	110.5	99.6	100.1
1899	122.4	99.6	102.9
1900	105.3	95.9	114.5
1901	109.2	96.2	115.9
1902	94.7	95.8	114.4
1903	97.4	98.6	113.1
1904	118.3	98.2	110.6
1905	123.9	98.7	110.3
1906	132.9	98.8	113.1
1907	136.1	97.9	116.6

ROOFERS, SLATE AND TILE, Male.

[Data from 40 establishments 1890–1903; 41, 1904; 71, 1905; 69, 1906; 70, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	110.3	100.8	101.2
1891	107.7	100.9	99.8
1892	105.9	101.0	100.9
1893	100.7	100.5	100.3
1894	90.4	100.7	97.5
1895	91.5	100.7	98.1
1896	97.8	99.9	98.4
1897	100.4	98.9	98.6
1898	95.9	99.0	101.3
1899	100.7	97.7	103.8
1900	98.2	95.2	109.5
1901	95.6	94.8	112.0
1902	100.4	91.7	118.5
1903	95.2	91.0	128.3
1904	82.5	91.0	130.6
1905	81.5	91.0	130.9
1906	85.4	90.8	135.3
1907	81.7	89.9	137.2

ROOFERS, TIN, Male.

[Data from 94 establishments 1890–1903; 100, 1904; 118, 1905, 1907; 119, 1906.]

Average 1890–99	100.0	100.0	100.0
1890	96.6	102.0	97.0
1891	102.5	101.2	99.1
1892	100.1	101.1	99.1
1893	105.2	100.4	100.0
1894	94.9	100.7	97.8
1895	93.7	100.3	98.8
1896	101.0	99.6	100.1
1897	96.7	99.0	100.4
1898	102.3	98.3	102.5
1899	107.6	97.4	105.2
1900	105.5	95.6	108.7
1901	109.1	93.8	111.9
1902	115.0	91.4	119.7
1903	110.3	91.4	122.2
1904	109.8	90.7	122.9
1905	111.3	90.6	126.5
1906	115.4	90.5	132.4
1907	119.1	90.2	133.8

STEAM FITTERS, Male.

[Data from 73 establishments 1890–1903; 86, 1904; 112, 1905; 120, 1906; 129, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	93.0	102.6	95.9
1891	90.9	101.9	96.2
1892	99.5	101.3	99.4
1893	107.9	101.6	97.4
1894	96.6	99.4	99.2
1895	95.3	99.8	98.2
1896	99.8	99.2	100.5
1897	105.8	98.7	101.5
1898	101.8	98.6	104.3
1899	108.4	96.9	107.4
1900	106.8	96.0	108.1
1901	115.2	94.0	115.1
1902	129.3	92.4	120.2
1903	129.0	89.0	127.3
1904	128.6	88.9	131.6
1905	139.4	89.1	133.3
1906	159.8	88.0	143.4
1907	153.3	87.9	147.3

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

BUILDING TRADES—Concluded.

STONE MASONS, Male.

[Data from 115 establishments 1890-1903; 110, 1904; 102, 1905; 100, 1906; 98, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	106.9	101.3	102.9
1891	115.2	101.3	103.2
1892	111.1	101.2	101.5
1893	101.4	100.6	100.7
1894	90.2	100.9	95.1
1895	90.1	100.4	96.4
1896	93.5	100.3	98.1
1897	89.8	98.6	100.3
1898	105.2	97.4	99.0
1899	97.1	98.0	102.8
1900	105.5	96.4	104.7
1901	104.6	95.2	110.8
1902	107.7	93.2	119.0
1903	121.1	92.0	126.6
1904	117.7	91.4	129.4
1905	116.8	91.3	129.5
1906	114.3	91.2	135.2
1907	100.9	90.6	139.7

STONE SETTERS, Male.

[Data from 27 establishments 1890-1903; 40, 1904; 57, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	88.1	103.9	92.3
1891	88.1	103.4	92.9
1892	99.1	100.1	100.2
1893	101.8	99.7	99.9
1894	96.3	99.2	100.8
1895	108.3	98.8	102.0
1896	106.4	99.4	100.8
1897	98.2	98.9	103.0
1898	99.1	98.4	104.3
1899	111.9	98.2	103.9
1900	122.9	96.3	107.5
1901	133.9	95.4	113.1
1902	130.3	95.4	110.9
1903	122.9	94.8	116.2
1904	118.5	94.8	117.9
1905	127.3	95.0	121.4
1906	127.9	95.3	125.9
1907	129.5	94.5	129.0

STRUCTURAL IRON WORKERS, Male.

[Data for employees from 19 establishments 1890-1903. Data for hours and wages from 19 establishments 1890-1892; 20, 1893-1903. Data from 37 establishments 1904; 59, 1905; 62, 1906, 1907.]

Average 1890-99	100.0	100.0	100.0	1899	115.5	100.5	108.8
1890	77.7	102.9	93.6	1900	142.2	98.0	120.4
1891	98.2	101.8	98.0	1901	195.5	96.7	138.4
1892	107.3	99.3	100.6	1902	228.2	91.6	155.9
1893	98.8	100.1	100.9	1903	206.6	92.2	159.8
1894	74.2	101.9	93.5	1904	205.5	90.6	171.4
1895	79.5	100.1	97.7	1905	194.3	90.1	171.8
1896	115.5	98.5	97.5	1906	234.8	90.9	180.4
1897	111.9	97.0	104.1	1907	216.5	91.3	190.3
1898	122.1	97.8	105.3				

CANDY.

CANDY MAKERS, Male.

[Data from 7 establishments 1890-1903; 22, 1904; 37, 1905; 41, 1906; 44, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	108.2	100.0	98.2
1891	104.9	99.9	98.1
1892	103.3	100.1	98.8
1893	101.6	100.1	95.7
1894	95.1	100.0	96.2
1895	100.0	100.0	100.8
1896	95.1	100.0	103.7
1897	103.3	100.0	99.3
1898	90.2	100.0	104.6
1899	91.8	99.9	104.8
1900	90.2	99.9	98.7
1901	78.7	99.8	104.9
1902	82.0	99.8	103.4
1903	83.6	99.9	103.4
1904	84.4	99.9	105.6
1905	88.7	99.9	107.4
1906	87.4	100.1	108.5
1907	92.2	100.0	110.2

DIPPERS, Female.

[Data from 5 establishments 1890-1903; 22, 1904; 33, 1905; 38, 1906; 40, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	117.1	98.6	106.3
1891	112.8	98.6	108.5
1892	103.0	99.8	100.8
1893	106.7	99.8	100.7
1894	96.3	99.8	101.3
1895	91.5	100.5	97.0
1896	94.5	100.6	96.2
1897	95.1	100.6	96.8
1898	89.0	100.7	96.4
1899	93.9	100.8	96.6
1900	103.0	100.8	99.2
1901	103.7	100.8	114.0
1902	101.8	100.8	113.5
1903	122.6	100.4	115.2
1904	130.7	100.6	118.7
1905	138.0	100.2	121.1
1906	143.1	100.2	129.5
1907	160.8	99.8	139.5

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CARPETS.

BURLERS, Female.

[Data from 6 establishments 1890-1903; 8, 1904-1906; 7, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	97.9	100.7	97.4
1891	95.9	100.7	99.8
1892	90.7	100.7	104.2
1893	111.3	99.3	101.6
1894	75.3	100.3	94.0
1895	103.1	99.5	97.0
1896	112.4	99.5	102.7
1897	95.9	99.9	97.4
1898	105.2	99.7	108.5
1899	107.2	99.8	97.3
1900	112.4	99.7	105.4
1901	117.5	99.7	111.1
1902	119.6	99.7	112.9
1903	123.7	99.5	123.4
1904	134.9	99.1	105.5
1905	129.7	99.0	112.6
1906	107.6	99.0	117.6
1907	122.9	98.8	120.3

DYERS, Male.

[Data from 6 establishments.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	120.4	101.4	98.4
1891	109.7	101.4	99.3
1892	94.6	100.9	102.0
1893	105.4	99.4	101.3
1894	90.3	99.9	95.9
1895	100.5	99.4	95.9
1896	98.4	99.3	100.7
1897	88.7	99.6	103.3
1898	93.0	99.4	101.5
1899	96.2	99.4	101.5
1900	97.3	99.3	100.9
1901	96.8	99.4	100.9
1902	110.8	99.2	100.2
1903	115.6	99.3	104.8
1904	114.5	99.0	102.8
1905	111.8	99.0	104.6
1906	98.9	98.9	105.9
1907	118.2	98.8	108.4

LOOM FIXERS, Male.

[Data from 9 establishments 1890-1903; 8, 1904-1906; 7, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	90.9	101.1	101.6
1891	96.1	101.1	98.0
1892	100.0	99.9	100.2
1893	101.3	99.4	100.7
1894	97.4	99.4	99.6
1895	101.3	99.5	98.4
1896	98.7	99.5	98.4
1897	100.0	99.4	102.7
1898	106.5	99.5	99.4
1899	101.3	99.6	100.8
1900	102.6	99.7	101.0
1901	105.2	99.7	100.8
1902	106.5	99.6	102.4
1903	111.7	99.3	106.3
1904	118.3	99.0	105.7
1905	111.7	99.1	108.1
1906	96.2	99.1	110.4
1907	88.3	99.3	112.0

SPOOLERS, Female.

[Data from 6 establishments 1890-1903; 8, 1904-1906; 7, 1907.]

Average 1890-99	100.0	100.0	100.0
1890	104.3	101.4	100.4
1891	104.3	101.4	95.7
1892	107.2	99.8	98.0
1893	113.8	99.3	101.5
1894	102.9	99.6	103.6
1895	110.9	99.5	99.3
1896	100.0	99.5	100.3
1897	85.5	99.7	101.2
1898	81.9	99.9	99.8
1899	91.3	99.7	100.5
1900	100.7	99.6	99.6
1901	102.2	99.6	101.2
1902	99.3	99.7	104.6
1903	98.6	99.7	106.2
1904	92.1	98.2	103.9
1905	95.0	98.2	106.0
1906	84.3	98.1	114.4
1907	89.4	98.0	116.7

TWISTERS, Female.

[Data from 3 establishments 1890-1903; 6, 1904, 1907; 7, 1905, 1906.]

Average 1890-99	100.0	100.0	100.0
1890	116.1	101.2	103.3
1891	109.7	101.2	104.4
1892	109.7	101.2	104.6
1893	101.6	99.6	103.4
1894	85.5	99.6	89.9
1895	103.2	99.1	91.7
1896	108.1	99.4	99.9
1897	85.5	99.6	99.5
1898	72.6	99.7	102.2
1899	109.7	99.3	100.9
1900	132.3	99.5	103.5
1901	121.0	99.2	103.3
1902	132.3	99.5	103.5
1903	145.2	99.7	107.2
1904	180.3	95.5	108.5
1905	180.3	95.5	108.4
1906	166.4	95.5	110.1
1907	203.9	95.6	122.2

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CARPETS—Concluded.

WEAVERS, BRUSSELS AND WILTON, Male.

[Data from 3 establishments 1890–1906; 4, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	106.0	100.0	100.0
1890	97.6	101.0	99.8
1891	92.9	101.0	97.1
1892	101.4	99.6	98.9
1893	94.8	100.0	97.1
1894	94.8	99.6	98.5
1895	106.9	99.7	102.2
1896	104.8	99.7	102.2
1897	106.4	99.7	102.7
1898	94.1	99.7	102.0
1899	106.4	99.8	104.7
1900	110.2	100.1	106.9
1901	119.0	99.9	108.3
1902	127.6	99.9	116.9
1903	143.5	99.9	122.9
1904	151.5	99.9	121.4
1905	159.0	99.9	131.0
1906	162.8	99.9	135.7
1907	183.7	99.8	137.7

WEAVERS, INGRAIN, Female.

[Data from 3 establishments 1890–1903; 6, 1904, 1905; 5, 1906; 4, 1907.]

Year.	Relative number of employees.	Relative hours per hour.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	96.9	101.8	96.3
1891	102.9	101.7	93.0
1892	104.3	99.4	94.7
1893	92.6	99.4	98.5
1894	106.0	99.4	100.4
1895	89.5	99.3	100.8
1896	95.2	99.6	101.6
1897	100.0	99.7	107.2
1898	103.8	99.8	100.3
1899	108.1	99.8	106.8
1900	105.3	99.9	103.4
1901	100.2	99.9	108.1
1902	103.6	99.9	93.4
1903	99.3	99.9	107.4
1904	95.5	98.3	99.9
1905	88.0	98.5	108.8
1906	53.8	95.6	112.6
1907	39.0	99.4	107.9

WINDERS, Female.

[Data from 6 establishments 1890–1903; 7, 1904–1907.]

Average 1890–99	100.0	100.0	100.0
1890	89.8	101.4	100.5
1891	89.4	101.4	96.9
1892	92.8	99.9	100.4
1893	104.2	99.4	99.6
1894	88.6	99.6	97.9
1895	108.9	99.6	97.9
1896	105.9	99.6	101.2
1897	103.4	99.7	98.4
1898	104.7	99.6	102.2
1899	111.0	99.6	105.1
1900	113.6	99.7	107.0
1901	117.8	99.5	103.7
1902	124.6	99.6	104.2
1903	128.4	98.9	106.5
1904	133.8	96.8	106.1
1905	132.1	97.1	109.8
1906	107.0	96.9	113.4
1907	82.3	97.1	125.0

CARRIAGES AND WAGONS.

BLACKSMITHS, Male.

[Data from 98 establishments 1890–1903; 96, 1904; 66, 1905; 67, 1906; 68, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	101.2	100.7	102.4
1891	101.2	100.8	101.8
1892	104.6	100.7	101.9
1893	115.4	100.6	94.3
1894	99.3	98.7	96.6
1895	104.3	99.4	95.0
1896	85.2	99.4	101.7
1897	88.2	100.0	102.4
1898	100.3	100.2	100.9
1899	100.7	99.6	102.9
1900	102.9	99.5	101.8
1901	111.1	99.7	102.4
1902	107.5	99.2	104.8
1903	112.0	98.3	106.5
1904	109.7	98.4	107.8
1905	112.2	97.6	110.6
1906	122.3	97.0	111.5
1907	125.4	96.5	113.2

BODY MAKERS, CARRIAGE, Male.

[Data from 26 establishments 1890–1903; 39, 1904; 37, 1905; 38, 1906; 48, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	86.2	100.4	100.1
1891	95.9	100.4	99.7
1892	95.9	100.3	101.2
1893	97.4	100.1	100.1
1894	116.9	100.4	98.6
1895	93.8	100.2	97.8
1896	91.3	100.0	98.5
1897	101.0	99.8	98.5
1898	100.5	99.8	101.5
1899	118.5	98.6	103.8
1900	116.4	99.5	100.5
1901	137.9	99.7	98.4
1902	139.0	99.7	102.6
1903	139.0	98.7	104.4
1904	152.4	98.7	104.6
1905	178.6	95.7	112.3
1906	200.5	95.8	115.4
1907	211.6	95.3	118.3

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CARRIAGES AND WAGONS—Concluded.

IRONERS, Male.

[Data for employees from 7 establishments 1890–1903. Data for hours and wages from 8 establishments 1890–1896, 1898–1903; 7, 1897. Data from 28 establishments 1904; 30, 1905; 32, 1906; 35, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	100.9	98.2
1891	104.1	101.2	96.4
1892	114.4	101.2	95.9
1893	106.2	99.6	99.9
1894	89.7	99.4	101.7
1895	95.9	100.0	99.3
1896	79.4	99.9	103.9
1897	92.8	99.3	102.2
1898	104.1	100.0	98.8
1899	111.3	97.7	103.6
1900	124.7	97.4	103.4
1901	120.6	99.3	100.2
1902	117.5	100.9	99.7
1903	128.9	96.4	111.9
1904	121.6	98.7	112.0
1905	125.7	95.7	116.0
1906	132.2	95.5	119.8
1907	127.6	95.5	120.0

MACHINE WOODWORKERS, Male.

[Data from 18 establishments 1890–1903; 24, 1904; 29, 1905; 31, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	94.7	100.8	99.0
1891	98.2	100.9	97.7
1892	97.4	100.8	101.1
1893	92.1	100.7	99.3
1894	83.7	97.5	100.7
1895	102.2	100.1	96.4
1896	93.4	98.7	102.6
1897	100.4	99.7	100.1
1898	117.2	100.8	100.7
1899	122.0	100.1	102.2
1900	118.9	99.0	105.1
1901	134.8	100.0	103.3
1902	136.6	99.8	109.1
1903	134.4	99.6	110.7
1904	124.1	97.1	109.9
1905	128.5	96.6	111.0
1906	146.0	96.4	114.0
1907	159.3	95.8	117.2

PAINTERS, Male.

[Data from 76 establishments 1890–1903; 95, 1904; 99, 1905; 70, 1906; 71, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	95.9	100.1	98.6
1891	98.8	100.3	98.4
1892	101.9	100.1	100.9
1893	100.7	100.0	100.8
1894	91.6	100.3	99.7
1895	96.3	100.1	100.3
1896	98.8	100.0	99.7
1897	96.3	99.9	99.4
1898	104.8	100.0	100.8
1899	114.7	99.4	101.4
1900	117.5	99.1	102.5
1901	122.5	99.5	103.5
1902	120.5	99.7	103.5
1903	116.2	98.5	108.2
1904	108.3	98.5	110.9
1905	105.6	98.0	112.1
1906	114.2	97.6	116.6
1907	112.0	97.1	121.6

TRIMMERS, CARRIAGE, Male.

[Data from 46 establishments 1890–1903; 76, 1904; 60, 1905; 56, 1906; 54, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	92.4	100.4	101.3
1891	92.9	100.5	100.9
1892	100.0	100.2	100.7
1893	93.4	99.9	101.8
1894	96.2	100.1	98.7
1895	96.7	100.2	99.1
1896	99.5	99.9	98.5
1897	101.9	100.1	98.9
1898	110.0	99.9	98.9
1899	117.1	98.6	101.3
1900	116.1	98.7	101.0
1901	128.9	98.7	101.6
1902	116.6	99.4	102.8
1903	118.0	98.1	106.6
1904	110.8	98.2	110.2
1905	108.3	97.5	114.0
1906	117.5	97.4	117.2
1907	114.8	96.6	120.7

WOODWORKERS, Male.

[Data from 29 establishments 1890–1903; 51, 1904; 31, 1905, 1906; 34, 1907.]

Year.			
Average 1890–99	100.0	100.0	100.0
1890	93.6	100.1	100.5
1891	93.6	100.2	100.4
1892	103.7	100.0	100.3
1893	103.7	100.2	99.2
1894	94.5	99.8	99.4
1895	95.4	100.1	101.2
1896	103.7	99.4	100.5
1897	102.8	100.3	99.4
1898	102.8	100.4	99.0
1899	106.4	99.4	100.2
1900	107.3	99.4	101.6
1901	111.9	98.8	101.2
1902	101.8	98.8	102.3
1903	96.3	97.4	104.7
1904	95.7	97.0	105.0
1905	107.0	95.8	101.9
1906	99.6	96.1	105.1
1907	93.0	95.3	106.3

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CARS, STEAM RAILROAD.

BLACKSMITHS, Male.

[Data for employees from 44 establishments 1890–1903. Data for hours and wages from 44 establishments 1890–1898; 45, 1899–1903. Data from 48 establishments 1904; 45, 1905, 1906; 46, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	111.5	101.9	102.3
1891	104.7	100.8	101.0
1892	107.9	101.5	101.6
1893	106.8	101.1	101.8
1894	82.1	96.6	101.1
1895	81.4	98.1	102.2
1896	100.6	98.8	96.1
1897	91.3	98.1	99.4
1898	104.6	101.1	97.0
1899	109.6	101.8	97.5
1900	121.3	101.9	97.9
1901	123.4	100.9	99.2
1902	129.6	100.7	100.4
1903	137.5	99.9	104.4
1904	127.6	98.4	111.5
1905	137.3	97.8	107.8
1906	148.0	97.0	110.9
1907	146.9	96.3	119.4

BOILER MAKERS, Male.

[Data from 34 establishments 1890–1903; 38, 1904; 33, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	91.5	103.7	100.4
1891	92.2	100.9	101.8
1892	100.9	103.3	100.8
1893	101.6	102.6	101.3
1894	94.0	94.8	99.1
1895	94.7	97.2	98.7
1896	100.2	97.2	99.1
1897	103.0	97.4	98.7
1898	108.7	101.5	99.4
1899	113.9	101.4	100.5
1900	118.3	101.8	101.9
1901	134.9	100.2	102.7
1902	139.7	99.8	105.5
1903	168.0	98.5	113.4
1904	159.3	98.5	118.3
1905	168.8	97.4	120.7
1906	178.1	96.9	121.5
1907	187.0	96.5	128.9

BRASS FINISHERS, Male.

[Data from 7 establishments 1890–1903; 9, 1904; 8, 1905; 9, 1906; 11, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	87.5	100.2	105.8
1891	84.7	99.2	105.1
1892	94.4	100.3	104.2
1893	106.9	100.4	107.0
1894	83.3	99.8	87.9
1895	87.5	99.6	93.8
1896	125.0	99.8	98.5
1897	98.6	99.6	99.1
1898	138.9	100.5	98.2
1899	91.7	100.5	100.3
1900	102.8	100.5	105.5
1901	101.4	100.3	101.0
1902	109.7	100.4	112.0
1903	201.4	94.0	120.6
1904	194.1	93.3	130.6
1905	219.4	92.8	113.7
1906	266.4	92.8	117.7
1907	217.2	93.0	122.4

CABINETMAKERS, Male.

[Data from 15 establishments 1890–1903; 20, 1904; 21, 1905–1907.]

Average 1890–99	100.0	100.0	100.0
1890	98.1	100.1	107.6
1891	96.7	99.8	107.3
1892	74.0	99.9	102.3
1893	88.3	100.3	105.4
1894	84.5	99.9	86.5
1895	107.6	100.1	91.8
1896	96.1	100.0	97.9
1897	116.6	99.9	97.2
1898	100.0	99.9	99.3
1899	137.7	100.0	104.7
1900	124.6	100.2	106.9
1901	126.1	99.4	112.7
1902	134.1	99.6	122.5
1903	103.0	93.4	130.4
1904	128.9	91.9	132.3
1905	91.6	92.0	120.1
1906	104.8	92.0	122.9
1907	103.6	92.0	128.2

CARPENTERS, Male.

[Data for employees from 40 establishments 1890–1903. Data for hours and wages from 40 establishments 1890–1898; 41, 1899–1903. Data from 49 establishments 1904; 46, 1905, 1906; 47, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	100.9	101.2	101.6
1891	101.5	100.4	101.4
1892	105.5	101.3	102.9
1893	104.7	100.5	104.6
1894	90.3	97.9	96.9
1895	89.6	99.0	98.4
1896	95.3	98.9	97.5
1897	95.9	98.6	98.2
1898	105.2	101.2	97.8
1899	111.3	101.0	100.8
1900	121.3	101.3	100.6
1901	122.2	100.6	102.3
1902	131.8	100.7	105.9
1903	133.7	99.0	109.7
1904	124.6	97.5	113.4
1905	160.7	97.3	115.5
1906	174.5	96.9	119.0
1907	187.4	97.0	124.5

LABORERS, Male.

[Data from 11 establishments 1890–1903; 41, 1904; 42, 1905; 45, 1906; 47, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	105.6	101.2	99.7
1891	111.1	101.3	99.2
1892	107.2	101.0	100.7
1893	105.2	100.3	112.3
1894	70.2	97.5	99.9
1895	81.2	99.8	97.2
1896	103.7	99.6	98.1
1897	82.6	99.1	98.5
1898	109.6	100.2	97.2
1899	123.8	100.0	97.5
1900	149.0	100.2	100.5
1901	145.8	100.6	100.3
1902	120.5	100.3	103.1
1903	140.9	102.4	104.4
1904	128.6	100.9	106.3
1905	176.2	100.0	107.8
1906	185.4	99.7	109.4
1907	205.2	99.9	111.9

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CARS, STEAM RAILROAD—Continued.

MACHINE WOODWORKERS, Male.

[Data for employees from 21 establishments 1890–1903. Data for hours and wages from 21 establishments 1890–1898; 22, 1899–1903. Data from 35 establishments 1904; 40, 1905; 41, 1906; 43, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	112.1	100.8	102.9
1891	119.3	100.7	106.0
1892	135.0	101.2	100.4
1893	143.2	101.2	102.5
1894	74.0	98.9	97.3
1895	74.3	99.3	96.4
1896	79.2	99.3	99.1
1897	74.6	98.8	95.4
1898	88.7	99.8	99.1
1899	99.5	100.1	100.9
1900	110.0	100.6	101.7
1901	119.8	99.6	100.8
1902	127.8	99.7	106.0
1903	139.6	96.1	113.7
1904	134.8	94.0	115.9
1905	145.1	94.2	115.4
1906	174.1	93.7	118.1
1907	183.3	94.0	122.9

MACHINISTS, Male.

[Data for employees from 44 establishments 1890–1903. Data for hours and wages from 44 establishments 1890–1898; 45, 1899–1903. Data from 48 establishments 1904; 45, 1905; 46, 1906; 47, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	94.8	102.0	100.5
1891	94.7	100.7	100.1
1892	99.6	102.2	100.3
1893	100.1	101.3	100.8
1894	90.9	95.9	100.7
1895	94.9	99.4	99.9
1896	101.9	98.7	99.5
1897	99.1	98.4	99.4
1898	108.5	100.3	98.9
1899	115.7	101.0	100.2
1900	118.5	101.7	100.6
1901	118.3	101.4	102.1
1902	124.3	101.3	104.8
1903	133.7	99.3	110.7
1904	128.8	98.5	115.2
1905	157.8	96.9	115.6
1906	165.9	96.7	118.6
1907	176.8	96.3	126.0

MOLDERS, BRASS, Male.

[Data from 11 establishments 1890–1903; 15, 1904, 1907; 14, 1905; 13, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	97.1	101.0	105.6
1891	102.9	101.4	106.9
1892	107.4	101.4	98.9
1893	102.9	101.1	101.0
1894	79.4	94.5	104.4
1895	82.4	101.2	93.8
1896	86.8	100.9	94.2
1897	100.0	96.3	96.4
1898	114.7	101.1	97.0
1899	119.1	101.2	101.6
1900	132.4	101.5	99.7
1901	147.1	101.6	102.1
1902	155.9	101.8	109.2
1903	158.8	95.5	117.5
1904	151.4	94.9	121.4
1905	160.3	94.6	123.6
1906	150.1	95.3	127.2
1907	106.0	95.9	130.6

MOLDERS, IRON, Male.

[Data for employees from 13 establishments 1890–1903. Data for hours and wages from 13 establishments 1890–1898; 14, 1899–1903. Data from 14 establishments 1904; 13, 1905, 1906; 12, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	113.0	100.4	105.1
1891	106.3	100.8	103.7
1892	111.6	100.8	104.5
1893	97.7	100.7	108.5
1894	86.0	96.4	99.2
1895	83.2	100.7	99.1
1896	101.6	101.2	92.6
1897	85.3	96.9	96.2
1898	100.0	101.0	95.5
1899	115.2	101.1	95.7
1900	124.7	101.1	97.9
1901	113.5	100.2	98.8
1902	125.6	100.2	101.2
1903	122.4	99.3	106.0
1904	108.3	97.8	110.1
1905	106.6	97.0	113.1
1906	116.0	97.0	119.0
1907	123.4	96.5	129.6

PAINTERS, Male.

[Data for employees from 35 establishments 1890–1903. Data for hours and wages from 35 establishments 1890–1898; 36, 1899–1903. Data from 46 establishments 1904, 1907; 45, 1905, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	113.8	101.3	102.5
1891	124.5	101.1	102.4
1892	113.1	101.3	101.6
1893	129.0	101.4	103.1
1894	79.8	98.2	97.8
1895	87.7	99.1	96.5
1896	85.6	99.0	98.7
1897	77.3	98.1	100.8
1898	88.3	100.2	98.3
1899	101.1	100.4	98.6
1900	98.0	100.8	97.3
1901	103.5	99.8	99.4
1902	104.6	99.7	101.5
1903	93.2	98.9	105.4
1904	108.3	96.2	111.4
1905	118.3	95.6	113.7
1906	129.8	95.3	115.3
1907	134.8	95.2	118.0

PATTERN MAKERS, WOOD, Male.

[Data for employees from 24 establishments 1890–1903. Data for hours and wages from 24 establishments 1890–1898; 25, 1899–1903. Data from 34 establishments 1904; 35, 1905, 1906; 36, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	101.8	101.6	101.8
1891	99.1	100.9	102.5
1892	105.4	101.6	101.2
1893	97.3	101.7	103.4
1894	88.3	98.9	100.9
1895	92.8	97.8	99.0
1896	99.1	97.7	95.8
1897	91.9	97.1	97.0
1898	112.6	101.0	100.0
1899	114.4	101.8	98.7
1900	117.1	101.7	100.1
1901	127.0	101.0	102.1
1902	125.2	101.5	102.5
1903	126.1	98.3	108.5
1904	126.8	97.5	110.7
1905	135.6	97.2	112.5
1906	138.7	96.7	115.8
1907	148.0	97.1	122.7

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TABLE 11.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CARS, STEAM RAILROAD—Concluded.

PIPE FITTERS, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890–1898; 7, 1899–1903. Data from 36 establishments 1904, 1905; 39, 1906; 41, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	101.9	102.5	103.6
1891	94.4	102.4	97.0
1892	113.0	103.3	95.7
1893	124.1	102.5	101.7
1894	92.6	94.5	102.5
1895	94.4	96.7	99.5
1896	87.0	96.3	99.2
1897	94.4	96.4	99.6
1898	96.3	102.1	101.4
1899	96.3	103.0	99.9
1900	94.4	102.9	99.1
1901	127.8	101.4	101.2
1902	135.2	101.4	100.1
1903	144.4	100.5	106.5
1904	156.4	99.3	110.4
1905	178.7	99.0	108.5
1906	200.3	98.9	113.8
1907	227.4	98.5	119.9

TINSMITHS, Male.

[Data for employees from 34 establishments 1890–1903. Data for hours and wages from 34 establishments 1890–1898; 35, 1899–1903. Data from 44 establishments 1904; 41, 1905, 1906; 43, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	94.7	102.1	98.2
1891	102.4	101.1	97.1
1892	93.9	101.1	102.9
1893	99.7	100.6	101.4
1894	96.5	97.3	97.8
1895	92.3	98.6	99.3
1896	94.9	98.6	101.8
1897	95.2	98.2	102.3
1898	117.3	101.3	96.6
1899	113.3	101.2	102.6
1900	116.0	102.0	103.4
1901	127.2	100.7	103.4
1902	129.3	100.3	112.2
1903	127.5	97.6	119.1
1904	129.0	96.5	121.7
1905	118.1	95.9	121.8
1906	151.7	95.0	130.0
1907	160.4	94.8	138.1

UPHOLSTERERS, Male.

[Data from 25 establishments 1890–1903; 34, 1904; 33, 1905–1907.]

Average 1890–99	100.0	100.0	100.0	1899	102.9	100.6	97.2
1890	100.6	100.7	108.0	1900	117.2	101.0	98.1
1891	116.1	100.9	105.3	1901	106.3	100.5	100.0
1892	106.3	100.9	105.1	1902	105.2	100.0	103.9
1893	120.7	101.1	107.0	1903	108.0	94.9	111.8
1894	87.4	98.5	92.9	1904	152.3	91.9	123.1
1895	88.5	98.7	97.0	1905	124.5	92.0	113.9
1896	85.1	99.5	94.9	1906	147.2	92.6	118.8
1897	91.4	99.0	96.2	1907	148.0	92.8	120.2
1898	96.9	100.2	96.2				

CLOTHING, FACTORY PRODUCT.

BUTTONHOLE MAKERS, MACHINE, Male.

[Data from 1 establishment 1890–1903; 7, 1904, 1907; 10, 1905; 8, 1906.]

Average 1890–99	100.0	100.0	100.0
1890	66.7	100.0	102.2
1891	66.7	100.0	102.2
1892	66.7	100.0	102.2
1893	100.0	100.0	99.1
1894	100.0	100.0	99.1
1895	100.0	100.0	99.1
1896	100.0	100.0	99.1
1897	100.0	100.0	99.1
1898	100.0	100.0	99.1
1899	100.0	100.0	99.1
1900	100.0	100.0	99.1
1901	66.7	91.5	111.6
1902	66.7	91.5	111.6
1903	66.7	91.5	111.6
1904	66.7	91.5	112.0
1905	66.7	91.5	109.2
1906	70.5	91.4	105.7
1907	62.7	91.9	101.2

BUTTONHOLE MAKERS, MACHINE, Female.

[Data from 6 establishments 1890–1903; 20, 1904; 14, 1905, 1907; 13, 1906.]

Average 1890–99	100.0	100.0	100.0
1890	106.7	101.6	96.2
1891	106.7	101.6	96.2
1892	106.7	101.6	96.7
1893	106.7	99.6	96.4
1894	93.3	98.9	99.6
1895	93.3	98.9	99.6
1896	100.0	99.4	102.3
1897	100.0	99.4	103.4
1898	100.0	99.4	107.2
1899	106.7	99.6	102.4
1900	106.7	99.6	99.0
1901	106.7	99.6	99.3
1902	113.3	96.8	99.5
1903	126.7	97.9	104.2
1904	128.0	97.7	106.2
1905	144.4	97.6	112.3
1906	134.4	97.6	124.6
1907	128.3	98.0	110.4

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CLOTHING, FACTORY PRODUCT—Continued.

CUTTERS, HAND, Male.

[Data from 8 establishments 1890–1903; 26, 1904; 25, 1905, 1906; 29, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	90.5	100.2	98.3
1891	90.5	100.2	98.3
1892	100.0	100.1	98.3
1893	95.2	100.1	99.8
1894	100.0	100.1	97.2
1895	100.0	99.9	99.7
1896	100.0	99.9	99.7
1897	104.8	99.7	103.4
1898	109.5	99.8	102.9
1899	114.3	99.9	102.7
1900	109.5	99.8	104.7
1901	119.0	99.7	105.4
1902	128.6	99.9	104.7
1903	123.8	100.1	110.9
1904	126.8	99.8	111.9
1905	135.2	100.8	110.1
1906	147.7	100.3	111.3
1907	142.9	100.7	113.8

CUTTERS, MACHINE, Male.

[Data from 7 establishments 1890–1903; 18, 1904; 21, 1905; 19, 1906; 23, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	105.9	100.1	100.8
1891	105.9	100.1	100.8
1892	111.8	100.3	99.8
1893	105.9	100.1	100.8
1894	100.0	100.1	96.7
1895	94.1	99.9	99.7
1896	94.1	99.9	99.7
1897	94.1	99.9	98.4
1898	94.1	99.9	99.9
1899	94.1	99.9	103.4
1900	105.9	100.1	103.6
1901	111.8	99.9	103.7
1902	111.8	99.0	106.1
1903	111.8	98.6	107.2
1904	135.5	98.1	110.3
1905	148.0	97.8	106.6
1906	141.0	97.2	109.9
1907	167.0	96.9	108.7

EXAMINERS, Female.

[Data from 4 establishments 1890–1903; 17, 1904; 8, 1905, 1906; 6, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	99.9	98.0
1891	100.0	99.9	98.0
1892	105.9	100.1	94.7
1893	100.0	99.9	98.0
1894	88.2	100.4	99.9
1895	88.2	100.4	100.4
1896	111.8	100.0	100.7
1897	88.2	99.6	102.8
1898	88.2	99.6	102.0
1899	111.8	99.8	105.1
1900	123.5	100.0	103.6
1901	141.2	99.6	107.2
1902	182.4	98.8	87.5
1903	211.8	97.0	86.6
1904	201.3	97.3	89.2
1905	276.8	97.6	84.7
1906	283.4	97.4	87.6
1907	283.4	96.9	90.2

FINISHERS, Female.

[Data from 7 establishments 1890–1903; 20, 1904; 26, 1905, 1907; 24, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	90.5	100.8	100.1
1891	90.5	100.8	100.1
1892	98.4	100.4	98.2
1893	96.8	100.3	97.9
1894	88.9	100.7	97.9
1895	90.5	100.1	101.3
1896	93.7	99.4	101.3
1897	103.2	99.3	101.3
1898	115.9	99.2	102.3
1899	123.8	99.0	99.2
1900	138.1	99.0	100.2
1901	133.3	98.5	103.3
1902	147.6	98.4	101.3
1903	142.9	98.4	101.1
1904	151.5	97.6	101.5
1905	164.7	97.3	106.4
1906	181.0	97.7	112.3
1907	188.4	96.9	120.3

PRESSERS, Male.

[Data for employees from 7 establishments 1890–1903. Data for hours and wages from 8 establishments 1890–1899; 7, 1900–1903. Data from 29 establishments 1904, 1905; 28, 1906; 30, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	107.7	100.2	100.4
1891	107.7	100.2	100.4
1892	111.5	100.3	100.3
1893	100.0	100.0	103.9
1894	111.5	100.3	100.3
1895	115.4	100.2	100.1
1896	88.5	99.6	96.8
1897	88.5	99.7	95.0
1898	92.3	99.8	97.5
1899	88.5	99.7	105.2
1900	103.8	99.8	104.9
1901	115.4	99.9	109.4
1902	107.7	99.9	111.0
1903	103.8	98.3	113.5
1904	111.7	97.9	115.2
1905	120.9	97.9	113.9
1906	135.5	98.7	118.6
1907	142.7	98.1	123.2

SEWING-MACHINE OPERATORS, Male.

[Data for employees from 1 establishment 1890–1903. Data for hours and wages from 1 establishment 1890–1901; 2, 1902, 1903. Data from 16 establishments 1904; 24, 1905, 1907; 21, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	83.3	100.0	99.3
1891	83.3	100.0	99.3
1892	91.7	100.0	101.9
1893	91.7	100.0	101.9
1894	108.3	100.0	98.6
1895	108.3	100.0	98.6
1896	83.3	100.0	99.3
1897	108.3	100.0	98.6
1898	108.3	100.0	98.6
1899	100.0	100.0	104.1
1900	108.3	91.5	103.5
1901	108.3	91.5	113.0
1902	108.3	92.0	95.3
1903	108.3	91.6	108.4
1904	132.7	90.6	103.7
1905	153.3	90.6	104.3
1906	160.0	90.4	110.5
1907	165.4	89.8	112.0

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TABLE 11.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

CLOTHING, FACTORY PRODUCT—Concluded.

SEWING-MACHINE OPERATORS, Female.

[Data from 9 establishments 1890–1903; 27, 1904; 26, 1905, 1906; 25, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0	1899	107.3	99.8	105.4
1890	94.1	100.2	97.5	1900	105.9	100.0	103.0
1891	101.9	99.9	99.4	1901	108.2	100.0	104.2
1892	98.6	100.0	101.1	1902	99.5	99.5	108.6
1893	88.9	100.5	98.8	1903	108.6	99.3	111.5
1894	97.8	100.1	96.6	1904	109.4	99.2	119.2
1895	99.9	100.2	97.3	1905	119.1	98.8	125.3
1896	96.7	100.0	99.6	1906	145.3	98.6	130.9
1897	103.6	99.7	99.0	1907	141.6	98.8	134.0
1898	111.2	99.6	105.7				

COTTON GOODS.

CARDING-MACHINE TENDERS, Male.

[Data for employees from 21 establishments 1890–1903. Data for hours and wages from 21 establishments 1890; 22, 1891; 23, 1892–1903. Data from 22 establishments 1904; 29, 1905; 30, 1906; 34, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	86.5	109.7	98.0
1891	94.9	101.1	99.8
1892	101.9	101.2	99.5
1893	100.5	99.6	101.4
1894	101.4	97.8	102.1
1895	99.1	99.7	101.4
1896	102.8	100.0	101.9
1897	100.0	98.9	100.8
1898	103.3	100.5	97.8
1899	107.9	100.5	97.0
1900	111.2	100.5	104.5
1901	110.2	100.8	103.2
1902	110.2	100.2	108.3
1903	114.4	100.2	108.9
1904	115.1	99.9	109.3
1905	118.5	100.1	112.3
1906	125.6	99.8	119.8
1907	127.2	98.5	134.3

DYERS, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890, 1891; 7, 1892–1903. Data from 5 establishments 1904; 8, 1905, 1906; 9, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	116.7	99.1	108.3
1891	118.5	98.9	107.2
1892	113.0	99.7	105.1
1893	100.0	99.6	104.1
1894	90.7	100.3	95.6
1895	88.9	100.7	92.3
1896	96.3	100.2	95.2
1897	87.0	100.6	96.9
1898	90.7	100.3	99.4
1899	92.6	100.7	97.8
1900	101.9	100.5	100.9
1901	103.7	100.0	102.3
1902	120.4	98.6	107.1
1903	118.5	98.8	107.7
1904	110.6	98.7	104.8
1905	110.0	98.6	105.7
1906	121.8	98.2	112.0
1907	129.1	95.4	123.5

LOOM FIXERS, Male.

[Data for employees from 22 establishments 1890–1903. Data for hours and wages from 22 establishments 1890; 23, 1891; 24, 1892–1903. Data from 22 establishments 1904; 29, 1905, 1906; 33, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	89.6	100.4	102.6
1891	92.5	101.0	100.4
1892	97.5	100.8	101.2
1893	95.3	99.9	103.9
1894	98.7	97.4	99.2
1895	102.2	99.6	98.0
1896	99.7	99.9	100.5
1897	108.5	99.3	99.9
1898	111.0	100.7	97.6
1899	105.7	100.9	96.4
1900	112.6	100.6	105.7
1901	117.0	100.5	105.8
1902	124.8	99.7	110.3
1903	129.6	99.8	111.4
1904	133.4	99.9	108.8
1905	131.7	99.9	108.4
1906	144.6	99.6	115.6
1907	146.9	97.7	128.8

SPINNERS, FRAME, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 8 establishments 1890, 1897; 9, 1891, 1893, 1898, 1901; 10, 1894, 1896, 1899, 1903; 11, 1892, 1895, 1900, 1902. Data from 12 establishments 1904; 11, 1905; 14, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	36.1	97.3	111.6
1891	101.4	100.5	89.7
1892	83.3	102.4	91.6
1893	101.4	100.2	89.9
1894	72.2	100.4	85.7
1895	70.8	100.9	91.2
1896	95.8	98.3	127.0
1897	120.8	99.2	109.2
1898	156.9	100.5	98.9
1899	161.1	100.3	105.8
1900	173.6	100.0	128.5
1901	119.4	99.0	135.8
1902	168.1	98.0	147.3
1903	86.1	96.4	185.9
1904	78.5	97.8	169.7
1905	75.3	97.8	200.4
1906	131.4	94.2	275.7
1907	157.4	92.4	303.8

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

COTTON GOODS—Concluded.

SPINNERS, FRAME, Female.

[Data for employees from 20 establishments 1890–1903. Data for hours and wages from 20 establishments 1890; 21, 1891; 22, 1892–1903. Data from 22 establishments 1904; 29, 1905, 1906; 34, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	88.8	100.2	99.8
1891	88.7	101.0	99.4
1892	92.3	101.5	95.4
1893	93.9	100.3	102.1
1894	95.4	98.1	97.9
1895	94.4	100.0	99.5
1896	97.0	99.6	108.3
1897	110.9	98.8	104.1
1898	119.9	100.1	97.6
1899	118.4	100.2	96.3
1900	107.8	100.1	108.7
1901	115.2	99.5	111.8
1902	110.5	99.2	117.1
1903	120.0	98.9	123.7
1904	125.6	98.9	125.0
1905	128.6	98.8	132.4
1906	127.6	98.6	149.4
1907	131.5	97.2	171.4

SPINNERS, MULE, Male.

[Data from 11 establishments 1890–1904, 1906; 13, 1905; 10, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	104.8	101.0	91.4
1891	106.2	101.0	93.2
1892	92.4	101.0	110.7
1893	94.8	99.7	114.2
1894	112.4	99.4	96.2
1895	102.9	99.7	97.8
1896	98.6	99.2	99.5
1897	95.2	99.7	102.3
1898	99.5	99.7	98.2
1899	91.0	99.7	96.4
1900	95.7	99.7	110.0
1901	98.6	99.7	110.0
1902	89.0	98.9	116.5
1903	84.3	99.0	115.2
1904	84.3	99.0	111.0
1905	83.0	99.0	113.4
1906	79.0	98.9	117.6
1907	79.3	98.4	138.4

WEAVERS, Male.

[Data for employees from 16 establishments 1890–1903. Data for hours and wages from 17 establishments 1890; 19, 1891, 1893, 1897, 1903; 20, 1892, 1894–1896, 1898–1902. Data from 20 establishments 1904; 28, 1905; 26, 1906; 32, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	80.3	99.2	113.5
1891	80.4	100.7	103.1
1892	84.5	101.5	99.0
1893	98.2	99.5	107.6
1894	95.0	99.0	98.6
1895	98.0	99.7	96.6
1896	100.2	99.3	102.9
1897	117.1	100.1	95.3
1898	120.7	100.5	91.5
1899	125.4	100.5	92.1
1900	124.3	100.0	105.1
1901	116.3	100.2	104.3
1902	121.3	99.5	110.7
1903	117.2	98.9	118.3
1904	109.0	98.5	115.3
1905	108.1	98.6	116.9
1906	118.5	97.7	128.2
1907	120.8	96.6	147.1

WEAVERS, Female.

[Data for employees from 19 establishments 1890–1903. Data for hours and wages from 19 establishments 1890; 20, 1891; 21, 1892–1903. Data from 21 establishments 1904; 29, 1905; 27, 1906; 32, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	98.7	101.1	99.1
1891	103.7	101.5	98.6
1892	101.6	101.8	99.7
1893	101.4	100.2	105.2
1894	102.7	96.6	99.6
1895	102.7	99.8	98.3
1896	99.6	99.6	103.5
1897	97.2	98.6	100.8
1898	97.6	100.3	98.4
1899	94.9	100.3	96.8
1900	97.0	100.1	109.8
1901	91.7	99.9	109.6
1902	93.0	99.6	112.2
1903	87.5	99.6	114.3
1904	86.1	99.7	113.5
1905	84.1	99.7	114.4
1906	76.5	99.4	121.8
1907	75.4	98.7	136.5

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

DYEING, FINISHING, AND PRINTING TEXTILES.

BLEACHERS, Male.

[Data from 6 establishments 1890–1903; 11, 1904; 14, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	79.6	101.4	99.8
1891	81.5	101.4	94.6
1892	96.3	100.7	97.7
1893	107.4	99.6	99.7
1894	95.4	99.3	99.2
1895	105.6	99.6	100.2
1896	100.0	99.6	102.5
1897	113.0	99.0	101.6
1898	101.9	99.7	102.7
1899	115.7	99.8	101.7
1900	122.2	99.8	102.9
1901	138.9	99.5	102.2
1902	159.3	99.5	103.3
1903	185.2	99.8	104.2
1904	198.9	99.7	103.7
1905	251.2	99.9	104.1
1906	269.1	98.8	109.9
1907	256.3	98.6	117.3

CALENDRERS, Male.

[Data from 8 establishments 1890–1903; 10, 1904; 14, 1905, 1906; 15, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	93.9	101.0	98.8
1891	98.8	100.9	99.3
1892	102.4	100.5	100.1
1893	100.0	99.8	101.4
1894	92.7	98.8	99.5
1895	95.1	99.8	98.8
1896	92.7	99.9	100.3
1897	102.4	99.2	100.9
1898	106.1	100.0	101.1
1899	117.1	100.0	100.0
1900	123.2	100.1	103.0
1901	126.8	100.1	104.1
1902	132.9	100.2	105.5
1903	147.6	100.2	106.0
1904	146.8	100.2	107.9
1905	178.3	100.6	107.0
1906	174.9	100.2	108.6
1907	190.7	99.9	111.4

COLOR MIXERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890, 1891; 4, 1892–1903. Data from 6 establishments 1904; 9, 1905, 1907; 10, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	105.6	102.5	97.3
1891	100.0	102.5	98.8
1892	95.8	101.6	100.2
1893	97.2	99.1	101.6
1894	93.0	99.1	97.4
1895	101.4	99.1	100.3
1896	105.6	99.1	101.0
1897	106.5	99.1	100.6
1898	94.4	99.1	102.0
1899	104.2	99.1	100.6
1900	94.4	99.1	105.1
1901	105.6	99.1	103.7
1902	115.5	99.1	104.1
1903	112.7	99.1	105.9
1904	103.9	99.2	106.4
1905	112.0	100.9	109.0
1906	96.1	101.1	110.7
1907	89.2	100.7	117.7

DYERS, Male.

[Data from 11 establishments 1890–1906; 13, 1904; 14, 1905; 17, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	95.3	102.0	99.4
1891	115.0	102.0	96.5
1892	106.2	101.3	98.5
1893	104.7	99.8	101.8
1894	98.5	97.3	98.7
1895	95.3	99.9	98.9
1896	97.5	99.9	101.8
1897	98.7	97.6	101.4
1898	94.5	100.1	101.3
1899	94.8	100.2	101.6
1900	93.6	100.2	104.9
1901	107.4	100.1	103.8
1902	99.2	100.1	106.0
1903	106.6	100.1	107.6
1904	97.8	100.5	108.2
1905	96.6	100.6	109.0
1906	106.0	99.9	110.8
1907	117.2	99.7	113.9

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

DYEING, FINISHING, AND PRINTING TEXTILES—Concluded.

ENGRAVERS, Male.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 4 establishments 1890, 1891; 5, 1892–1903. Data from 5 establishments 1904; 8, 1905, 1907; 9, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	101.8	101.8	99.3
1891	98.2	101.8	98.2
1892	101.8	101.3	99.1
1893	94.7	99.3	96.7
1894	91.2	99.2	98.6
1895	78.9	99.1	99.9
1896	100.0	99.3	100.4
1897	101.8	99.3	101.2
1898	108.8	99.4	103.7
1899	122.8	99.4	102.8
1900	138.6	99.3	103.6
1901	115.8	99.4	106.5
1902	124.6	99.3	105.8
1903	103.5	99.0	105.9
1904	106.7	99.6	106.6
1905	112.1	99.2	107.2
1906	120.0	99.2	107.8
1907	124.0	97.7	107.5

PRINTERS, Male.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 5 establishments 1890, 1891; 6, 1892–1903. Data from 6 establishments 1904; 10, 1905, 1907; 11, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	107.3	101.7	97.0
1891	100.0	101.7	97.8
1892	94.5	101.1	100.8
1893	98.2	99.4	102.7
1894	85.5	99.4	103.2
1895	96.4	99.4	99.6
1896	96.4	99.3	100.3
1897	101.8	99.3	100.3
1898	107.3	99.4	98.1
1899	110.9	99.3	100.3
1900	103.6	99.3	100.5
1901	110.9	99.4	100.7
1902	125.5	99.4	100.8
1903	112.7	99.3	100.3
1904	106.7	100.1	100.5
1905	110.0	99.5	99.6
1906	108.9	99.4	100.2
1907	108.9	99.8	100.2

ELECTRICAL APPARATUS AND SUPPLIES.

ARMATURE WINDERS, Male.

[Data from 4 establishments 1890–1903; 7, 1904–1906; 8, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	68.3	100.9	98.3
1891	56.1	100.7	100.8
1892	63.4	100.8	99.3
1893	63.4	100.8	98.1
1894	97.6	101.3	94.0
1895	114.6	101.4	95.7
1896	136.6	98.3	108.3
1897	129.3	98.8	102.0
1898	129.3	98.1	101.9
1899	136.6	98.7	101.6
1900	175.6	99.4	99.7
1901	175.6	94.7	111.7
1902	187.8	94.7	109.7
1903	222.0	94.6	112.8
1904	204.0	94.4	109.9
1905	305.1	94.6	113.7
1906	400.1	94.7	123.6
1907	442.1	94.2	127.8

BRASS FINISHERS, Male.

[Data from 1 establishment 1890–1903; 5, 1904–1906; 6, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	50.0	100.0	101.1
1891	56.3	100.0	100.0
1892	56.3	100.0	100.0
1893	62.5	100.0	99.1
1894	62.5	100.0	98.7
1895	75.0	100.0	97.4
1896	143.8	100.0	98.5
1897	156.3	100.0	101.0
1898	118.8	100.0	103.9
1899	200.0	100.0	100.6
1900	181.3	100.0	104.9
1901	206.3	93.2	103.8
1902	256.3	93.2	104.9
1903	262.5	93.2	105.2
1904	203.1	93.2	105.4
1905	247.3	92.7	104.0
1906	421.0	92.9	113.4
1907	501.0	92.7	108.7

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

ELECTRICAL APPARATUS AND SUPPLIES—Concluded.

MACHINISTS, Male.

[Data from 4 establishments 1890-1903; 7, 1904-1906; 8, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	50.4	99.0	101.1
1891	57.8	99.4	100.0
1892	58.5	99.4	99.4
1893	61.5	99.5	99.4
1894	82.2	100.1	96.2
1895	112.6	100.3	102.0
1896	114.8	100.1	97.9
1897	137.8	100.6	99.4
1898	157.0	100.7	101.4
1899	165.9	100.7	103.3
1900	206.7	101.0	106.4
1901	220.7	95.3	110.8
1902	258.5	95.2	107.4
1903	264.4	95.2	108.7
1904	205.6	95.2	110.4
1905	309.9	95.1	107.8
1906	440.5	95.1	111.8
1907	386.5	95.0	109.1

PATTERN MAKERS, Male.

[Data from 1 establishment 1890-1903; 4, 1904, 1905; 5, 1906; 6, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	50.0	100.0	94.0
1891	50.0	100.0	94.0
1892	50.0	100.0	94.0
1893	75.0	100.0	94.0
1894	75.0	100.0	94.0
1895	100.0	100.0	94.0
1896	125.0	100.0	94.0
1897	125.0	100.0	109.7
1898	125.0	100.0	116.0
1899	175.0	100.0	116.4
1900	250.0	100.0	99.3
1901	250.0	93.2	105.0
1902	225.0	93.2	107.2
1903	250.0	93.2	116.3
1904	263.0	93.2	115.6
1905	330.1	93.0	117.1
1906	398.0	93.0	119.0
1907	336.0	93.0	121.0

FLOUR.

BOLTERS, Male.

[Data from 11 establishments 1890-1903; 21, 1904; 32, 1905, 1906; 34, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	95.7	99.9	100.9
1891	95.7	99.9	100.9
1892	95.7	99.9	101.4
1893	95.7	99.9	101.4
1894	95.7	99.9	99.6
1895	95.7	99.9	100.4
1896	104.3	100.1	98.8
1897	108.7	100.2	98.7
1898	108.7	100.2	99.0
1899	108.7	100.2	99.0
1900	108.7	100.2	100.8
1901	108.7	100.2	103.7
1902	108.7	100.2	106.6
1903	108.7	100.2	106.5
1904	108.7	100.4	106.6
1905	105.1	100.6	106.5
1906	108.7	99.9	108.3
1907	116.4	98.0	112.8

LABORERS, Male.

[Data from 7 establishments 1890-1903; 31, 1904; 45, 1905, 1906; 46, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	81.3	100.5	97.0
1891	82.4	100.5	97.3
1892	83.0	100.4	97.4
1893	84.7	100.4	97.8
1894	84.1	100.4	97.8
1895	88.1	100.2	99.1
1896	118.8	99.5	103.1
1897	119.3	99.5	103.0
1898	129.0	99.3	103.8
1899	127.3	99.4	103.5
1900	127.8	99.4	103.9
1901	134.1	98.4	115.1
1902	134.1	98.9	117.6
1903	131.3	96.9	118.0
1904	130.6	97.0	117.8
1905	136.7	97.4	117.1
1906	144.3	97.1	118.2
1907	156.9	96.2	122.9

MILLERS, Male.

[Data from 33 establishments 1890-1903; 39, 1904; 46, 1905, 1906, 47, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	92.5	99.7	100.4
1891	92.5	99.7	100.6
1892	94.8	99.9	100.3
1893	94.8	99.9	100.4
1894	96.5	100.0	99.9
1895	96.5	100.0	100.2
1896	106.4	100.3	99.4
1897	106.4	100.5	98.7
1898	109.2	100.2	100.0
1899	111.0	99.8	100.2
1900	112.1	99.8	101.5
1901	111.6	99.8	102.1
1902	116.2	95.4	107.8
1903	119.1	93.0	110.7
1904	119.9	93.4	111.6
1905	123.8	93.7	112.1
1906	128.6	93.8	112.8
1907	141.5	93.1	113.1

MILLWRIGHTS, Male.

[Data from 18 establishments 1890-1903; 26, 1904; 38, 1905, 1906; 39, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	93.8	100.1	100.2
1891	87.5	100.4	99.7
1892	93.8	100.1	100.7
1893	114.6	99.2	101.9
1894	95.8	100.0	99.8
1895	91.7	100.2	98.5
1896	100.0	99.8	98.3
1897	93.8	100.9	98.6
1898	120.8	99.6	101.4
1899	114.6	99.8	100.9
1900	110.4	100.0	102.9
1901	102.1	100.4	103.6
1902	106.3	100.2	105.4
1903	104.2	100.3	106.2
1904	116.7	100.1	107.0
1905	127.7	100.0	103.7
1906	129.6	100.0	105.3
1907	117.4	99.3	109.4

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

FLOUR—Concluded.

PACKERS, Male.

[Data from 15 establishments 1890–1903; 35, 1904; 45, 1905; 46, 1906; 47, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0	1899	126.9	97.8	105.3
1890	88.0	101.1	98.5	1900	134.3	97.2	107.5
1891	88.9	99.8	102.9	1901	146.3	97.5	113.7
1892	90.7	100.4	101.6	1902	151.9	97.6	114.5
1893	90.7	101.0	96.8	1903	156.5	98.0	114.6
1894	91.7	101.2	96.4	1904	143.9	96.5	114.0
1895	89.8	101.0	94.1	1905	157.6	97.3	115.7
1896	102.8	100.0	99.5	1906	159.3	97.2	118.0
1897	107.4	99.3	101.6	1907	148.6	97.1	121.5
1898	118.5	98.4	103.5				

FOUNDRY AND MACHINE SHOP.

BLACKSMITHS, Male.

[Data from 166 establishments 1890–1903; 192, 1904; 179, 1905; 188, 1906; 197, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	99.5	100.5	101.4
1891	100.5	100.2	101.6
1892	101.2	100.5	101.2
1893	101.7	99.9	101.4
1894	88.4	99.3	99.1
1895	93.9	100.2	98.6
1896	95.1	99.7	100.1
1897	93.9	99.8	98.6
1898	110.2	100.2	98.0
1899	115.5	99.8	99.9
1900	120.7	99.6	101.7
1901	130.7	97.8	104.4
1902	139.2	96.8	107.7
1903	142.5	95.7	111.8
1904	130.6	95.5	110.2
1905	137.6	98.0	111.7
1906	158.4	98.1	114.7
1907	147.4	97.8	118.0

BOILER MAKERS, Male.

[Data from 97 establishments 1890–1903; 96, 1904; 91, 1905; 93, 1906; 94, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	105.8	101.2	99.4
1891	102.2	101.2	98.8
1892	105.1	100.6	99.1
1893	101.3	99.8	99.0
1894	87.5	99.9	100.2
1895	89.9	99.9	100.8
1896	97.9	99.1	100.7
1897	94.8	99.3	99.9
1898	107.2	99.6	100.3
1899	108.4	99.2	101.7
1900	116.9	98.0	103.3
1901	125.5	97.1	107.1
1902	128.6	96.3	107.3
1903	134.6	96.1	109.2
1904	121.3	95.0	113.2
1905	120.9	94.8	115.4
1906	130.4	95.2	118.2
1907	130.3	94.7	123.0

BOILER RIVETERS, Male.

[Data from 8 establishments 1890–1903; 16, 1904; 20, 1905; 19, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	84.8	101.8	107.0
1891	131.6	101.7	92.9
1892	62.0	99.9	108.5
1893	117.7	100.8	93.3
1894	98.7	100.9	94.3
1895	94.9	100.8	99.0
1896	100.0	99.6	96.8
1897	77.2	99.2	102.6
1898	89.9	99.4	96.1
1899	141.8	95.8	109.6
1900	132.9	98.1	94.8
1901	168.4	97.2	101.5
1902	102.5	93.6	115.3
1903	149.4	92.8	113.1
1904	130.2	92.2	119.2
1905	137.4	91.3	122.9
1906	161.3	91.2	128.7
1907	114.7	91.9	121.3

BRASS FINISHERS, Male.

[Data from 20 establishments 1890–1903; 26, 1904, 1905; 23, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	108.7	99.9	100.7
1891	104.8	99.9	102.2
1892	102.5	100.1	101.4
1893	103.1	100.2	99.9
1894	86.5	99.7	101.1
1895	94.4	99.7	100.9
1896	89.6	99.9	100.0
1897	96.3	100.0	98.0
1898	102.2	100.2	97.5
1899	111.5	100.2	98.2
1900	108.4	98.5	102.0
1901	120.8	98.6	104.1
1902	127.5	95.1	109.6
1903	142.4	92.9	111.9
1904	136.9	92.1	113.3
1905	147.0	92.1	113.0
1906	177.0	91.6	115.4
1907	182.3	91.6	116.2

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TABLE 11.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

FOUNDRY AND MACHINE SHOP—Continued.

CORE MAKERS, Male.

[Data for employees from 40 establishments 1890–1903. Data for hours and wages from 40 establishments 1890–1901; 41, 1902, 1903. Data from 104 establishments 1904; 119, 1905; 128, 1906; 144, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	95.7	100.2	100.2
1891	97.0	100.2	100.3
1892	97.0	100.2	100.9
1893	102.4	100.2	99.0
1894	95.7	99.9	97.2
1895	95.7	100.2	98.1
1896	95.7	100.1	100.3
1897	92.7	99.4	101.2
1898	107.3	99.8	101.2
1899	122.0	99.7	101.4
1900	134.1	99.5	102.9
1901	134.1	98.4	107.0
1902	154.9	97.5	106.3
1903	154.9	95.7	113.0
1904	128.1	94.7	116.4
1905	161.8	95.0	115.1
1906	178.3	94.6	120.7
1907	183.8	94.0	124.2

CORE MAKERS, Female.

[Data from 2 establishments 1890–1903; 5, 1904, 1905; 6, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	142.9	100.2	83.3
1891	85.7	100.0	102.3
1892	71.4	99.9	109.6
1893	57.1	99.7	116.6
1894	85.7	100.0	105.0
1895	85.7	100.0	105.5
1896	71.4	99.9	107.9
1897	100.0	100.1	97.5
1898	114.3	100.2	96.6
1899	171.4	100.0	75.4
1900	157.1	100.3	88.7
1901	114.3	100.2	93.9
1902	185.7	100.2	86.5
1903	185.7	100.2	97.0
1904	165.8	98.4	100.3
1905	288.9	98.0	98.4
1906	209.0	98.7	101.9
1907	224.3	98.6	121.1

LABORERS, Male.

[Data from 128 establishments 1890–1903; 186, 1904; 192, 1905; 198, 1906; 211, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	102.6	100.3	99.6
1891	100.2	100.2	101.6
1892	103.2	100.2	102.2
1893	98.4	100.1	101.7
1894	81.1	99.4	98.2
1895	93.7	100.1	98.3
1896	97.8	100.0	99.6
1897	94.0	99.5	99.9
1898	109.1	99.9	99.2
1899	119.8	100.3	99.9
1900	126.8	99.7	102.7
1901	135.6	97.7	104.7
1902	143.5	97.1	107.0
1903	154.3	96.0	111.7
1904	145.1	95.7	113.2
1905	162.0	95.7	114.4
1906	183.8	95.7	119.4
1907	186.7	96.3	123.6

MACHINISTS, Male.

[Data from 218 establishments 1890–1903; 228, 1904; 206, 1905; 205, 1906; 209, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	97.9	100.7	100.5
1891	100.0	100.6	101.2
1892	99.9	100.2	102.3
1893	104.9	99.8	101.9
1894	80.1	99.9	97.5
1895	90.8	99.9	97.5
1896	95.6	99.8	99.6
1897	93.4	99.7	99.7
1898	111.9	100.0	99.0
1899	125.5	99.3	100.8
1900	130.9	99.1	103.6
1901	141.2	97.0	106.8
1902	151.8	95.7	110.3
1903	158.5	94.9	112.9
1904	135.7	94.0	112.8
1905	151.0	94.5	113.1
1906	169.0	94.4	116.4
1907	179.4	93.7	120.4

MOLDERS, BRASS, Male.

[Data from 38 establishments 1890–1903; 52, 1904; 48, 1905; 39, 1906; 44, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	90.5	100.0	98.4
1891	96.8	99.8	99.8
1892	100.9	100.1	102.3
1893	100.9	100.0	101.5
1894	90.9	100.0	98.5
1895	93.6	100.1	96.2
1896	92.3	100.0	101.1
1897	97.7	100.1	100.3
1898	114.1	99.9	100.9
1899	122.7	100.1	101.1
1900	115.9	99.5	102.9
1901	133.2	99.1	107.5
1902	137.3	96.8	114.0
1903	142.7	94.8	117.0
1904	134.8	94.0	117.3
1905	127.0	94.3	113.8
1906	127.0	94.1	115.1
1907	124.2	93.9	116.2

MOLDERS, IRON, Male.

[Data from 183 establishments 1890–1903; 179, 1904; 169, 1905; 168, 1906; 171, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	99.6	100.4	100.6
1891	99.3	100.5	101.5
1892	102.0	100.3	100.9
1893	107.0	99.8	101.2
1894	84.7	99.7	97.9
1895	93.5	100.0	98.0
1896	97.8	99.9	99.2
1897	91.9	99.8	100.0
1898	108.7	100.0	99.1
1899	115.6	99.7	101.7
1900	127.4	99.6	106.7
1901	127.5	98.6	108.4
1902	133.4	97.2	114.6
1903	141.8	95.8	120.2
1904	116.2	95.1	119.5
1905	134.9	95.1	119.3
1906	147.6	95.1	123.8
1907	154.4	94.8	127.0

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

FOUNDRY AND MACHINE SHOP—Concluded.

PATTERN MAKERS, WOOD, Male.

[Data from 161 establishments 1890-1903; 178, 1904; 171, 1905; 174, 1906; 180, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99...	100.0	100.0	100.0	1899.....	122.3	99.3	100.9
1890.....	92.2	100.6	100.3	1900.....	124.1	98.9	104.3
1891.....	94.1	100.6	101.0	1901.....	120.2	97.7	106.8
1892.....	94.4	100.5	101.0	1902.....	126.7	96.3	111.4
1893.....	101.4	99.8	102.1	1903.....	132.9	94.8	116.2
1894.....	85.8	100.0	96.6	1904.....	120.5	94.4	117.3
1895.....	98.8	99.9	97.7	1905.....	136.2	94.5	118.4
1896.....	100.1	99.7	99.9	1906.....	143.7	94.2	126.2
1897.....	96.4	99.5	99.5	1907.....	140.9	93.9	127.2
1898.....	114.0	100.1	101.1				

FURNITURE.

CABINETMAKERS, Male.

[Data for employees from 50 establishments 1890-1903. Data for hours and wages from 50 establishments 1890-1892; 51, 1893-1903. Data from 55 establishments 1904; 58, 1905, 1906; 63, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99...	100.0	100.0	100.0
1890.....	92.0	101.2	101.8
1891.....	91.6	100.5	102.3
1892.....	102.1	99.7	104.5
1893.....	101.3	99.4	103.6
1894.....	95.9	98.4	100.1
1895.....	92.8	99.8	98.2
1896.....	96.9	99.8	97.2
1897.....	105.4	99.8	98.1
1898.....	103.3	100.7	95.7
1899.....	118.3	100.4	98.6
1900.....	112.8	99.9	100.4
1901.....	108.4	98.3	107.2
1902.....	119.6	96.8	115.1
1903.....	125.7	96.7	116.9
1904.....	127.7	95.9	119.0
1905.....	137.6	95.3	122.2
1906.....	158.5	93.4	128.5
1907.....	150.1	93.7	128.5

CARVERS, HAND, Male.

[Data from 20 establishments 1890-1903; 25, 1904; 36, 1905; 37, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99..	100.0	100.0	100.0
1890.....	83.3	103.1	97.0
1891.....	94.9	99.8	103.2
1892.....	121.8	96.0	113.7
1893.....	94.9	102.6	97.7
1894.....	91.0	99.2	95.6
1895.....	98.7	102.2	84.6
1896.....	91.0	101.6	95.2
1897.....	100.0	99.5	101.0
1898.....	102.6	99.8	99.7
1899.....	126.9	96.4	112.3
1900.....	94.9	101.2	102.2
1901.....	101.3	99.4	112.3
1902.....	124.4	97.2	119.0
1903.....	120.5	99.8	112.7
1904.....	117.6	97.3	115.9
1905.....	110.9	97.2	116.7
1906.....	121.8	97.3	120.7
1907.....	111.7	98.4	120.7

MACHINE WOODWORKERS, Male.

[Data for employees from 41 establishments 1890-1903. Data for hours and wages from 41 establishments 1890-1892; 42, 1893-1903. Data from 53 establishments 1904; 57, 1905, 1906; 61, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99...	100.0	100.0	100.0
1890.....	99.4	101.4	100.7
1891.....	99.5	101.0	101.1
1892.....	98.2	100.0	101.4
1893.....	96.3	100.0	99.8
1894.....	93.8	98.0	98.6
1895.....	97.1	99.4	98.6
1896.....	102.9	99.9	99.2
1897.....	104.4	99.3	100.4
1898.....	102.1	100.2	99.5
1899.....	105.5	100.8	101.1
1900.....	112.0	100.8	102.1
1901.....	118.8	101.1	103.0
1902.....	115.4	100.6	108.7
1903.....	115.7	100.3	112.2
1904.....	124.1	99.7	111.1
1905.....	128.4	99.6	114.5
1906.....	131.0	99.1	119.0
1907.....	121.6	99.1	122.1

SAWYERS, Male.(a)

[Data from 30 establishments 1890-1892; 31, 1893-1903; 38, 1904; 41, 1905; 47, 1906; 54, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99..	100.0	100.0	100.0
1890.....	95.1	100.8	99.9
1891.....	95.1	100.3	101.8
1892.....	94.8	100.0	101.3
1893.....	96.9	100.3	101.4
1894.....	94.5	97.5	99.3
1895.....	98.5	99.9	99.3
1896.....	103.7	100.4	98.1
1897.....	102.8	100.2	99.9
1898.....	107.7	100.1	98.8
1899.....	110.7	100.5	100.4
1900.....	112.9	99.0	103.7
1901.....	112.6	98.2	108.2
1902.....	115.7	97.6	113.3
1903.....	118.4	97.6	114.4
1904.....	116.8	96.8	118.6
1905.....	120.1	96.6	120.8
1906.....	120.2	96.1	122.5
1907.....	118.1	96.0	125.6

(a) Including all classes of sawyers.

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

FURNITURE—Concluded.

UPHOLSTERERS, Male.

[Data from 11 establishments 1890–1903; 18, 1904; 24, 1905, 1906; 26, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0	1899	106.0	99.6	104.0
1890	100.7	100.5	99.4	1900	106.7	98.3	106.0
1891	99.3	100.3	101.4	1901	113.4	94.4	121.1
1892	107.4	99.9	100.2	1902	113.4	94.9	125.2
1893	100.0	100.3	98.2	1903	112.1	92.1	125.3
1894	98.7	100.2	100.6	1904	114.3	91.3	125.1
1895	93.3	100.1	99.9	1905	124.3	91.7	126.2
1896	98.0	99.7	98.1	1906	126.8	91.5	130.0
1897	98.0	99.7	97.6	1907	114.0	91.3	131.8
1898	100.7	99.7	100.6				

GAS.

LABORERS, Male.

[Data from 3 establishments 1890–1903; 23, 1904; 61, 1905; 60, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0	Average 1890–99	100.0	100.0	100.0
1890	104.3	100.0	98.7	1890	68.9	100.0	102.3
1891	68.6	100.0	98.1	1891	60.7	100.0	102.4
1892	65.7	100.0	94.1	1892	72.1	100.0	101.7
1893	57.1	100.0	99.8	1893	86.9	100.0	102.5
1894	120.0	100.0	103.9	1894	95.1	100.0	101.6
1895	82.9	100.0	98.1	1895	111.5	100.0	101.7
1896	67.1	100.0	103.3	1896	104.9	100.0	101.3
1897	164.3	100.0	103.5	1897	91.8	100.0	99.6
1898	174.3	100.0	98.7	1898	200.0	100.0	91.5
1899	101.4	100.0	101.7	1899	114.8	100.0	95.4
1900	138.6	100.0	96.6	1900	109.8	100.0	100.1
1901	111.4	100.0	105.5	1901	109.8	100.0	94.8
1902	135.7	100.0	99.7	1902	188.5	100.0	98.3
1903	182.9	100.0	99.1	1903	132.8	97.5	103.0
1904	216.2	99.5	101.9	1904	165.9	97.9	101.9
1905	234.1	100.2	102.3	1905	172.9	97.7	100.9
1906	270.2	100.6	105.5	1906	183.0	98.1	102.8
1907	254.5	101.1	107.1	1907	212.3	97.9	107.0

GLASS.

BATCH MAKERS, Male.

[Data from 8 establishments 1890–1903; 14, 1904; 24, 1905; 25, 1906; 28, 1907.]

Average 1890–99	100.0	100.0	100.0	Average 1890–99	100.0	100.0	100.0
1890	89.7	101.4	98.6	1890	107.1	99.8	97.2
1891	103.4	100.4	98.6	1891	123.6	99.7	98.4
1892	103.4	100.4	98.6	1892	97.3	99.9	98.9
1893	103.4	100.4	99.4	1893	68.9	100.2	98.6
1894	89.7	98.8	101.9	1894	100.4	100.1	105.6
1895	89.7	98.8	101.7	1895	94.7	100.1	98.9
1896	89.7	98.8	101.9	1896	107.6	100.0	102.3
1897	103.4	100.4	99.4	1897	94.2	100.1	103.4
1898	103.4	100.4	99.9	1898	98.9	100.0	98.5
1899	110.3	100.1	100.2	1899	109.3	100.1	102.3
1900	103.4	100.4	100.5	1900	100.9	100.0	101.4
1901	103.4	100.4	100.2	1901	140.9	99.7	106.1
1902	106.9	99.7	100.6	1902	148.0	99.6	105.5
1903	100.0	100.1	103.0	1903	160.4	99.5	106.8
1904	102.1	99.9	103.4	1904	184.5	99.3	106.0
1905	102.1	100.2	104.8	1905	163.6	99.2	103.3
1906	108.3	99.9	105.8	1906	161.0	98.9	106.8
1907	106.4	99.7	108.5	1907	163.3	99.0	108.5

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

GLASS—Continued.

BLOWERS, GREEN GLASS, Male.

[Data from 4 establishments 1890–1904; 5, 1905; 6, 1906; 8, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	61.3	101.3	101.1
1891	109.5	99.5	98.7
1892	73.0	100.2	106.4
1893	59.9	101.8	99.4
1894	65.3	99.7	100.2
1895	76.6	99.3	97.9
1896	115.3	99.4	99.3
1897	134.7	99.7	96.0
1898	135.6	101.5	94.7
1899	168.9	97.7	106.4
1900	195.9	98.1	117.3
1901	175.2	98.1	125.2
1902	173.0	98.1	118.1
1903	191.4	98.1	120.2
1904	231.0	98.1	132.2
1905	213.0	98.0	124.9
1906	221.4	94.5	135.7
1907	269.6	94.1	138.8

BLOWERS, WINDOW GLASS, Male.

[Data from 2 establishments 1890–1903; 3, 1904; 8, 1905, 1907; 7, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	99.9	110.8
1891	120.8	100.0	104.5
1892	108.3	100.0	109.8
1893	104.2	100.1	104.0
1894	104.2	99.9	94.6
1895	95.8	100.1	75.1
1896	87.5	100.1	88.3
1897	83.3	100.1	93.8
1898	104.2	99.9	110.1
1899	104.2	99.9	109.0
1900	100.0	99.9	131.4
1901	104.2	99.9	111.6
1902	108.3	100.1	144.9
1903	95.8	100.3	158.5
1904	97.6	100.1	111.2
1905	104.9	99.6	134.0
1906	104.9	100.1	146.3
1907	105.8	100.1	156.0

CUTTERS, WINDOW GLASS, Male.

[Data for employees from 1 establishment 1890–1903. Data for hours and wages from 2 establishments 1890–1899; 1, 1900; 2, 1901–1903. Data from 3 establishments 1904; 8, 1905, 1907; 7, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	98.8	110.8
1891	100.0	99.5	106.5
1892	100.0	99.5	107.6
1893	100.0	98.8	101.8
1894	100.0	100.2	103.3
1895	100.0	101.1	80.0
1896	100.0	101.1	91.5
1897	100.0	101.1	91.2
1898	100.0	98.8	100.3
1899	100.0	101.1	106.8
1900	100.0	102.2	100.9
1901	112.5	100.4	114.1
1902	112.5	100.4	119.3
1903	100.0	98.8	123.9
1904	95.5	99.2	96.5
1905	107.3	97.2	116.5
1906	107.3	97.2	120.0
1907	104.8	97.3	129.3

FLATTENERS, WINDOW GLASS, Male.

[Data from 2 establishments 1890–1903; 3, 1904; 8, 1905, 1907; 7, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	99.3	108.1
1891	100.0	99.3	106.4
1892	100.0	99.3	105.4
1893	100.0	99.3	106.8
1894	100.0	99.3	97.1
1895	83.3	101.6	74.2
1896	83.3	101.6	85.9
1897	83.3	101.6	95.9
1898	100.0	99.3	108.3
1899	100.0	99.3	111.9
1900	83.3	101.6	125.0
1901	100.0	99.3	116.4
1902	100.0	99.3	141.9
1903	100.0	99.3	143.9
1904	100.0	99.3	117.8
1905	104.2	100.3	145.3
1906	108.5	94.2	181.3
1907	110.5	94.3	205.0

GAFFERS, FLINT GLASS, Male.

[Data from 2 establishments 1890–1903; 5, 1904; 6, 1905; 7, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	112.8	100.1	97.4
1891	110.3	100.0	99.7
1892	115.4	100.0	98.0
1893	118.0	100.0	98.5
1894	94.9	100.0	99.9
1895	92.3	100.0	101.0
1896	89.7	100.0	101.6
1897	89.7	100.0	101.7
1898	92.3	100.0	101.0
1899	89.7	100.0	101.0
1900	92.3	100.0	101.9
1901	100.0	100.0	103.4
1902	110.3	100.0	105.3
1903	112.8	100.0	105.6
1904	114.1	100.0	106.6
1905	99.2	100.2	106.5
1906	91.3	99.6	106.9
1907	87.7	99.7	106.8

GATHERERS, FLINT GLASS, Male.

[Data from 3 establishments 1890–1903; 5, 1904; 8, 1905, 1906; 10, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	125.9	100.0	96.3
1891	125.0	100.0	97.1
1892	96.4	100.0	97.7
1893	92.0	100.0	98.4
1894	83.9	100.0	101.0
1895	92.0	100.0	99.8
1896	92.0	100.0	100.4
1897	92.0	100.0	102.8
1898	100.0	100.0	102.5
1899	103.6	100.0	103.9
1900	134.8	100.0	104.1
1901	146.4	100.0	105.3
1902	161.6	100.0	109.7
1903	208.9	100.0	114.4
1904	182.9	100.2	112.2
1905	193.1	99.9	109.5
1906	182.1	99.7	109.8
1907	218.1	99.5	113.9

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

HATS, FUR.

BLOCKERS, Male.

[Data from 4 establishments 1890–1904; 13, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1890	75.0	101.8	106.4
1891	80.8	101.6	97.9
1892	86.5	100.7	100.3
1893	92.3	101.5	92.9
1894	113.5	100.9	98.8
1895	98.1	101.0	91.9
1896	96.2	101.5	93.4
1897	101.9	101.5	95.5
1898	115.4	94.5	110.0
1899	134.6	94.9	112.8
1900	111.5	94.7	113.6
1901	121.2	94.6	106.9
1902	117.3	93.2	113.2
1903	119.2	92.1	111.2
1904	105.7	92.2	111.8
1905	125.3	90.6	117.7
1906	126.6	90.7	116.5
1907	138.0	90.8	120.2

COLORERS, Male.

[Data from 4 establishments 1890–1904; 12, 1905; 14, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1890	100.0	100.0	102.7
1891	112.5	100.4	98.1
1892	95.8	100.4	95.8
1893	129.2	100.1	96.4
1894	133.3	99.4	98.9
1895	79.2	99.7	100.6
1896	79.2	100.0	106.3
1897	79.2	100.0	101.4
1898	87.5	100.1	100.8
1899	104.2	100.0	99.0
1900	87.5	99.7	100.4
1901	112.5	99.5	100.6
1902	116.7	92.2	109.6
1903	129.2	90.6	112.1
1904	141.7	90.7	115.5
1905	158.4	90.5	119.0
1906	138.3	90.6	119.8
1907	170.4	89.4	120.5

CONERS, Male.

[Data from 5 establishments 1890–1904; 15, 1905; 14, 1906, 1907.]

Average 1890–99...	100.0	100.0	100.0
1890	86.4	100.6	99.7
1891	100.0	100.7	99.5
1892	100.0	100.7	99.5
1893	109.1	100.4	100.9
1894	104.5	100.4	99.2
1895	86.4	100.1	99.6
1896	86.4	100.6	94.3
1897	100.0	99.6	106.2
1898	104.5	99.7	99.9
1899	118.2	97.3	101.3
1900	136.4	97.1	102.7
1901	154.5	97.4	103.1
1902	140.9	92.6	120.1
1903	140.9	90.8	130.3
1904	145.9	90.7	136.0
1905	161.9	88.3	140.5
1906	156.5	88.2	137.1
1907	187.1	88.4	137.6

CURLERS, Male.

[Data from 4 establishments 1890–1904; 11, 1905–1907.]

Average 1890–99..	100.0	100.0	100.0
1890	76.2	100.1	110.9
1891	76.2	100.3	116.8
1892	81.0	100.1	113.0
1893	85.7	100.2	101.5
1894	109.5	99.9	98.4
1895	95.2	99.9	93.2
1896	104.8	100.0	93.2
1897	114.3	99.9	90.5
1898	109.5	100.1	92.1
1899	142.9	99.5	90.4
1900	123.8	99.6	90.1
1901	123.8	99.9	101.8
1902	100.0	99.3	106.5
1903	133.3	99.4	107.3
1904	147.1	99.4	109.7
1905	165.5	99.1	117.3
1906	182.9	98.9	121.1
1907	201.0	98.9	104.7

FEEDERS, Female.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890–1892, 1894, 1897–1903; 4, 1893, 1895, 1896. Data from 3 establishments 1904; 9, 1905, 1906; 12, 1907.]

Average 1890–99...	100.0	100.0	100.0
1890	89.5	100.4	100.8
1891	105.3	100.4	99.1
1892	105.3	100.4	99.1
1893	105.3	100.1	99.1
1894	110.5	100.4	98.7
1895	84.2	100.0	100.8
1896	89.5	100.0	99.6
1897	89.5	100.4	100.2
1898	105.3	100.3	100.2
1899	94.7	97.5	102.6
1900	89.5	97.8	101.7
1901	105.3	98.2	99.9
1902	121.1	91.2	113.1
1903	115.8	89.2	115.6
1904	136.9	88.8	121.8
1905	160.9	88.9	120.6
1906	178.0	88.9	130.4
1907	234.2	89.0	144.2

FINISHERS, Male.

[Data from 6 establishments 1890–1903; 5, 1904; 13, 1905, 1906; 14, 1907.]

Average 1890–99..	100.0	100.0	100.0
1890	105.8	100.4	103.2
1891	95.7	99.3	97.6
1892	94.2	99.8	99.1
1893	91.7	99.8	98.4
1894	85.2	100.4	100.7
1895	85.9	100.0	101.3
1896	92.8	100.1	99.8
1897	104.3	99.6	98.0
1898	109.4	100.2	98.7
1899	134.7	100.5	103.4
1900	141.5	100.2	102.9
1901	149.5	100.5	106.4
1902	170.0	98.5	114.6
1903	183.4	95.7	116.8
1904	148.1	97.9	110.8
1905	146.3	97.7	115.5
1906	144.2	97.4	124.3
1907	163.8	96.6	124.0

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

HATS, FUR—Continued.

FLANGERS, Male.

[Data from 3 establishments 1890–1903; 4, 1904; 13, 1905, 1907; 12, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	92.9	100.8	124.9
1891	78.6	100.4	101.8
1892	78.6	100.4	100.5
1893	71.4	99.4	91.8
1894	92.9	99.5	113.7
1895	78.6	99.6	88.2
1896	85.7	99.9	97.5
1897	78.6	100.4	92.5
1898	142.9	100.3	89.4
1899	178.6	99.3	91.6
1900	250.0	99.9	90.6
1901	300.0	98.6	91.9
1902	250.0	95.7	108.9
1903	242.9	92.4	95.3
1904	219.2	93.5	96.4
1905	223.6	93.5	101.5
1906	217.7	93.5	109.5
1907	262.7	90.5	107.5

FUR BLOWERS, Male.

[Data from 3 establishments 1890–1903; 4, 1904; 13, 1905, 1906; 14, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	90.0	100.2	103.9
1891	100.0	100.2	96.1
1892	120.0	100.3	96.4
1893	100.0	100.2	100.0
1894	80.0	100.1	95.9
1895	90.0	100.2	101.0
1896	90.0	100.2	101.9
1897	80.0	100.1	100.7
1898	90.0	100.2	96.7
1899	130.0	98.4	108.4
1900	190.0	98.6	107.2
1901	200.0	98.7	106.4
1902	190.0	91.2	119.6
1903	200.0	89.5	131.1
1904	219.0	89.3	141.1
1905	230.5	89.2	155.5
1906	204.3	89.2	188.2
1907	259.3	87.4	201.4

HARDENERS, Male.

[Data from 5 establishments 1890–1904; 14, 1905, 1907; 13, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	90.5	100.5	107.0
1891	104.8	100.6	100.6
1892	104.8	100.6	102.6
1893	104.8	100.6	100.3
1894	104.8	100.6	100.0
1895	85.7	100.4	103.1
1896	100.0	100.2	97.4
1897	104.8	99.5	99.9
1898	109.5	99.6	95.3
1899	109.5	97.4	93.7
1900	109.5	97.3	94.5
1901	123.8	97.9	96.7
1902	119.0	92.3	109.0
1903	119.0	92.3	110.0
1904	142.8	92.3	115.0
1905	153.2	90.4	117.0
1906	153.2	90.7	113.2
1907	177.1	90.9	114.5

POUNCERS, Male.

[Data from 4 establishments 1890–1904; 11, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	104.2	100.2	104.6
1891	100.0	100.1	106.2
1892	91.7	100.4	86.6
1893	112.5	100.3	95.6
1894	112.5	100.3	92.1
1895	91.7	100.1	93.8
1896	83.3	99.8	106.9
1897	70.8	99.7	105.6
1898	108.3	99.5	111.0
1899	137.5	99.6	97.4
1900	212.5	100.2	100.0
1901	275.0	100.3	90.6
1902	383.3	91.4	88.7
1903	379.2	89.8	96.4
1904	379.2	90.5	91.5
1905	459.1	90.3	87.8
1906	443.1	90.5	93.8
1907	571.4	89.5	90.4

SIZERS, Male.

[Data from 5 establishments 1890–1904; 13, 1905; 14, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	89.1	101.9	109.7
1891	97.7	101.4	105.0
1892	71.3	101.3	110.9
1893	88.4	101.1	96.4
1894	106.0	100.4	102.5
1895	100.0	100.3	98.7
1896	104.3	101.0	89.3
1897	102.6	101.0	91.3
1898	116.8	95.9	96.5
1899	124.4	95.8	99.9
1900	150.5	96.6	108.3
1901	155.4	96.9	111.1
1902	141.9	94.0	114.1
1903	152.5	92.1	128.1
1904	157.7	93.3	125.8
1905	171.5	93.0	124.1
1906	181.3	93.1	133.0
1907	180.6	92.5	138.8

STIFFENERS, Male.

[Data from 3 establishments 1890–1903; 4, 1904; 14, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	80.0	100.6	91.4
1891	80.0	100.6	85.8
1892	80.0	100.6	92.8
1893	120.0	99.6	94.1
1894	80.0	100.6	101.7
1895	100.0	100.1	103.9
1896	140.0	99.4	108.1
1897	140.0	99.4	106.7
1898	120.0	99.6	108.3
1899	120.0	99.6	107.3
1900	120.0	99.6	113.0
1901	60.0	101.9	124.7
1902	100.0	96.6	104.1
1903	100.0	94.9	120.8
1904	110.0	94.9	122.6
1905	114.8	93.3	121.8
1906	109.7	92.7	129.9
1907	135.7	92.9	119.3

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

HATS, FUR—Concluded.

TRIMMERS, Female.

[Data from 4 establishments 1890–1903; 5, 1904; 14, 1905, 1907; 13, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	63.9	101.1	108.0
1891	78.7	101.5	105.0
1892	71.0	101.0	105.9
1893	90.3	99.6	102.2
1894	114.2	99.4	97.3
1895	93.5	99.6	99.7
1896	98.7	98.7	97.5
1897	116.1	99.4	97.5
1898	123.2	99.9	97.4
1899	151.6	99.8	99.6
1900	165.2	100.0	103.9
1901	165.8	100.1	98.3
1902	151.6	96.2	100.1
1903	146.5	93.8	98.4
1904	150.2	94.4	104.2
1905	158.8	94.2	113.6
1906	173.1	93.9	114.3
1907	188.7	92.7	118.0

WEIGHERS, Female.

[Data from 3 establishments 1890–1904; 11, 1905; 8, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	83.3	100.3	102.5
1891	116.7	100.4	102.0
1892	100.0	100.4	98.3
1893	116.7	100.4	99.8
1894	100.0	100.4	95.8
1895	100.0	100.4	98.3
1896	100.0	100.4	100.9
1897	100.0	100.4	98.3
1898	116.7	100.4	99.8
1899	116.7	96.8	104.0
1900	116.7	96.8	106.2
1901	150.0	96.7	106.1
1902	166.7	91.2	112.7
1903	166.7	88.7	114.5
1904	166.7	89.4	113.7
1905	184.6	89.5	114.5
1906	164.1	88.9	122.4
1907	191.5	89.0	134.6

HOSIERY AND KNIT GOODS.

BOARDERS, Male.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 5 establishments 1890–1901; 6, 1902, 1903. Data from 8 establishments 1904; 20, 1905, 1906; 21, 1907.]

Average 1890–99	100.0	100.0	100.0	1899	106.6	99.8	94.2
1890	98.7	101.3	107.9	1900	111.8	99.6	91.9
1891	103.9	101.3	100.3	1901	105.3	99.2	116.2
1892	105.3	101.3	90.3	1902	118.4	99.2	107.8
1893	119.7	99.7	106.8	1903	102.6	98.2	125.4
1894	76.3	98.2	91.5	1904	114.8	98.4	123.5
1895	107.9	99.4	110.8	1905	127.5	98.3	127.9
1896	93.4	99.7	99.9	1906	143.9	98.4	132.6
1897	84.2	99.7	99.0	1907	147.5	97.5	148.6
1898	109.2	99.7	99.3				

FINISHERS, Female.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 5 establishments 1890–1901, 6, 1902, 1903. Data from 8 establishments 1904, 19, 1905; 22, 1906; 27, 1907.]

Average 1890–99	100 0	100.0	100.0	Average 1890–99	100.0	100.0	100.0
1890	76 0	101.3	106.6	1890	47.7	102.8	107.7
1891	91 8	101.3	113 2	1891	59.1	102.8	118.6
1892	137 2	101 3	105.2	1892	84.1	102.8	99.8
1893	100 5	101 0	97.4	1893	75.0	100.5	113.4
1894	79 1	91 3	92.4	1894	56.8	91.3	110.0
1895	98 5	101.1	93.4	1895	81.8	100.3	112.2
1896	105 1	100 8	100.9	1896	115.9	100.1	90.4
1897	99 3	100 8	98.8	1897	138.6	99 9	81.8
1898	109 2	100 6	100.7	1898	177.3	99 8	85.4
1899	101 0	100 6	92 3	1899	165.9	99.8	80.7
1900	121 9	98.1	99 3	1900	181.8	98.7	90.9
1901	115 8	97.8	103.4	1901	220.5	98.7	92.3
1902	114 8	98.1	118 7	1902	202.3	98.7	95.7
1903	122 4	96.0	121.3	1903	193.2	97.4	123.9
1904	97 0	96.7	119.7	1904	154 0	97.6	115.4
1905	114 9	96.2	126.0	1905	171.4	97.3	119.2
1906	132.2	94.4	137.0	1906	200.9	99.0	126.2
1907	129.0	95.0	145.8	1907	229.2	96.9	128.1

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

HOSIERY AND KNIT GOODS—Continued.

KNITTERS, Female.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 7 establishments 1890–1895; 6, 1896, 1897, 1902, 1903; 5, 1898–1901. Data from 9 establishments 1904; 17, 1905; 19, 1906; 24, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	82.1	100.5	104.9
1891	109.7	100.6	104.8
1892	107.6	100.6	99.0
1893	124.8	100.5	97.4
1894	90.0	95.7	101.1
1895	97.9	100.4	104.6
1896	96.6	100.5	98.5
1897	86.6	100.5	98.7
1898	98.3	100.5	96.2
1899	105.5	100.5	94.5
1900	106.2	99.3	91.5
1901	100.3	99.6	103.1
1902	109.7	99.3	112.4
1903	121.4	98.6	116.6
1904	99.0	98.2	111.4
1905	121.4	98.1	124.1
1906	133.7	97.6	130.8
1907	120.7	97.1	135.5

LOOPERS, Female.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 4 establishments 1890–1893; 5, 1894–1902; 6, 1903. Data from 5 establishments 1904; 16, 1905; 17, 1906; 20, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	94.8	101.9	99.8
1891	139.7	102.0	103.3
1892	143.1	102.0	100.0
1893	132.8	101.6	104.2
1894	70.7	91.5	95.9
1895	75.9	101.3	106.7
1896	69.0	99.9	117.4
1897	82.8	99.9	91.0
1898	87.9	99.9	93.3
1899	96.6	99.9	88.5
1900	115.5	98.3	80.7
1901	87.9	98.2	94.3
1902	82.8	98.2	92.9
1903	96.6	98.2	106.1
1904	93.8	98.1	93.3
1905	106.1	98.4	99.4
1906	113.1	97.8	105.5
1907	111.0	97.0	110.2

MENDERS, Female.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 5 establishments 1890–1901; 6, 1902, 1903. Data from 6 establishments 1904; 18, 1905; 22, 1906; 27, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	85.5	101.8	108.9
1891	95.2	101.8	105.5
1892	166.3	101.8	99.6
1893	109.6	99.5	100.8
1894	110.8	95.9	92.4
1895	89.2	99.4	113.4
1896	74.7	99.7	97.8
1897	68.7	100.1	92.1
1898	120.5	100.2	95.8
1899	84.3	99.8	93.8
1900	106.0	99.2	104.1
1901	116.9	98.8	92.3
1902	120.5	99.0	112.2
1903	110.8	98.6	110.5
1904	127.9	98.6	106.1
1905	152.6	98.2	113.7
1906	157.0	98.0	117.2
1907	153.8	97.4	122.1

PRESSERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890, 1891, 1902, 1903; 4, 1892–1901. Data from 5 establishments 1904; 14, 1905; 15, 1906; 18, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	94.1	101.1	107.4
1891	76.5	101.1	105.2
1892	117.6	101.1	92.6
1893	117.6	100.8	98.9
1894	111.8	92.3	94.6
1895	94.1	100.7	94.4
1896	105.9	100.7	100.9
1897	100.0	100.7	100.8
1898	94.1	100.7	103.9
1899	105.9	100.7	101.4
1900	111.8	98.3	106.6
1901	94.1	97.4	103.6
1902	117.6	99.0	107.1
1903	141.2	99.3	116.2
1904	207.6	99.5	112.9
1905	222.4	99.6	120.5
1906	248.6	99.4	123.7
1907	246.5	99.6	137.1

PRESSERS, Female.

[Data from 2 establishments 1890–1904; 3, 1905; 7, 1906; 11, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	45.0	102.4	110.8
1891	25.0	102.4	102.3
1892	130.0	102.4	101.5
1893	160.0	99.0	99.8
1894	55.0	99.0	109.6
1895	155.0	99.0	91.4
1896	85.0	99.0	105.4
1897	80.0	99.0	97.9
1898	115.0	99.0	88.8
1899	125.0	99.0	92.9
1900	135.0	99.0	107.1
1901	250.0	99.0	104.0
1902	135.0	99.0	110.3
1903	135.0	99.0	100.9
1904	125.0	97.2	122.3
1905	365.4	98.5	131.7
1906	498.6	98.6	137.6
1907	450.4	98.5	135.9

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

HOSIERY AND KNIT GOODS—Concluded.

RIBBERS, Female.

[Data from 2 establishments 1890–1904; 6, 1905; 7, 1906; 8, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0	1899	80.0	100.0	114.4
1890	107.5	100.0	100.5	1900	97.5	100.0	110.1
1891	102.5	100.0	112.3	1901	95.0	100.0	112.8
1892	112.5	100.0	103.1	1902	90.0	100.0	120.9
1893	107.5	100.0	103.4	1903	107.5	100.0	119.0
1894	102.5	100.0	91.8	1904	110.9	100.0	117.3
1895	97.5	100.0	98.8	1905	121.6	100.0	122.6
1896	92.5	100.0	87.2	1906	125.1	100.0	127.0
1897	97.5	100.0	92.0	1907	112.7	99.7	137.6
1898	90.0	100.0	96.4				

IRON AND STEEL, BAR.

CATCHERS, Male.

[Data for employees from 12 establishments 1890–1903. Data for hours and wages from 13 establishments 1890, 1894, 1895; 14, 1891–1893, 1896–1898; 15, 1899; 16, 1900–1903. Data from 17 establishments 1904; 23, 1905; 24, 1906; 25, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	93.8	102.8	116.1
1891	93.8	101.4	104.8
1892	96.9	101.4	99.8
1893	112.5	100.8	91.8
1894	103.1	101.3	87.4
1895	109.4	100.0	87.8
1896	87.5	100.8	101.7
1897	96.9	97.8	98.4
1898	100.0	97.6	94.0
1899	103.1	96.2	118.4
1900	103.1	97.0	121.2
1901	103.1	96.9	120.7
1902	112.5	98.4	137.4
1903	118.8	98.3	144.7
1904	106.6	97.0	131.4
1905	108.7	97.3	134.7
1906	101.1	97.1	150.5
1907	102.0	96.9	152.6

HEATERS, Male.

[Data for employees from 12 establishments 1890–1903. Data for hours and wages from 13 establishments 1890, 1894, 1895; 14, 1891–1893, 1896–1898; 15, 1899; 16, 1900–1903. Data from 19 establishments 1904; 22, 1905; 24, 1906; 27, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	95.9	103.3	116.9
1891	100.0	101.8	106.5
1892	98.0	102.2	98.0
1893	100.0	101.7	92.1
1894	91.8	101.8	94.2
1895	104.1	101.0	88.0
1896	93.9	101.3	95.4
1897	106.1	95.7	97.6
1898	100.0	96.0	98.5
1899	102.0	95.1	112.6
1900	110.2	96.3	119.7
1901	93.9	99.7	109.8
1902	95.9	99.9	116.9
1903	108.2	99.2	121.1
1904	105.6	98.7	111.3
1905	104.7	99.0	108.0
1906	102.9	99.6	113.6
1907	102.9	99.6	117.7

HEATERS' HELPERS, Male.

[Data for employees from 11 establishments 1890–1903. Data for hours and wages from 12 establishments 1890, 1894, 1895; 13, 1891–1893, 1896–1898; 14, 1899; 15, 1900–1903. Data from 18 establishments 1904; 21, 1905; 24, 1906; 26, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	100.0	103.9	118.2
1891	105.7	102.4	101.7
1892	103.8	102.6	99.1
1893	107.5	102.5	96.6
1894	103.8	100.3	90.9
1895	96.2	100.9	93.5
1896	92.5	100.1	96.2
1897	96.2	96.1	94.9
1898	96.2	96.0	96.9
1899	98.1	95.3	111.8
1900	101.9	98.3	119.0
1901	86.8	101.1	116.6
1902	90.6	101.0	127.8
1903	92.5	100.7	135.8
1904	83.5	100.9	127.0
1905	84.1	101.2	124.9
1906	79.9	101.6	133.6
1907	79.9	101.6	135.8

HOT STRAIGHTENERS, Male.

[Data for employees from 11 establishments 1890–1903. Data for hours and wages from 11 establishments 1890; 12, 1891–1899; 13, 1900–1903. Data from 16 establishments 1904; 21, 1905; 22, 1906, 24, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	101.5	102.8	102.0
1891	101.5	101.4	102.6
1892	101.5	101.5	98.9
1893	101.5	101.5	98.9
1894	97.0	101.8	87.1
1895	100.0	101.0	103.7
1896	100.0	101.2	108.2
1897	95.5	98.1	91.7
1898	98.5	95.4	96.2
1899	103.0	95.4	112.9
1900	111.9	96.1	110.7
1901	111.9	96.2	120.0
1902	113.4	96.6	140.3
1903	114.9	95.5	136.1
1904	105.0	94.3	120.4
1905	112.6	93.8	123.4
1906	93.3	92.4	132.6
1907	97.2	92.5	135.6

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TABLE H.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

IRON AND STEEL, BAR—Concluded.

ROLLERS, Male.

[Data for employees from 12 establishments 1890–1903. Data for hours and wages from 13 establishments 1890, 1894, 1895; 14, 1891–1893, 1896–1899; 15, 1900–1903. Data from 18 establishments 1904; 20, 1905; 23, 1906; 25, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	103.4	101.5	102.8
1891	93.1	101.3	105.1
1892	96.6	101.6	98.6
1893	117.2	100.0	92.6
1894	103.4	101.1	89.0
1895	103.4	100.5	89.7
1896	93.1	100.9	98.8
1897	96.6	97.7	166.0
1898	96.6	97.7	102.0
1899	100.0	97.6	114.5
1900	113.8	98.6	119.5
1901	103.4	99.0	124.0
1902	110.3	98.0	134.0
1903	113.8	98.9	136.8
1904	101.8	98.9	129.5
1905	108.4	99.4	135.2
1906	104.5	98.9	139.3
1907	105.7	98.8	143.4

ROUGHERS, Male.

[Data for employees from 12 establishments 1890–1903. Data for hours and wages from 13 establishments 1890, 1894, 1895; 14, 1891–1893, 1896–1898; 15, 1899; 16, 1900–1903. Data from 20 establishments 1904; 25, 1905; 26, 1906; 28, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	101.8	101.9	105.6
1891	96.5	101.3	108.9
1892	93.0	101.5	108.5
1893	96.5	101.6	102.2
1894	101.8	101.3	92.0
1895	108.8	100.9	87.5
1896	96.5	101.5	95.6
1897	94.7	97.3	99.5
1898	107.0	96.8	90.0
1899	103.5	95.9	112.1
1900	112.3	97.3	119.3
1901	105.3	97.6	126.1
1902	101.8	97.8	140.6
1903	107.0	97.5	144.4
1904	98.6	97.3	134.2
1905	103.3	97.9	136.9
1906	98.4	97.8	143.8
1907	102.2	98.0	156.8

IRON AND STEEL, BESSEMER CONVERTING.

BLOWERS, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890; 7, 1891, 1894–1896; 8, 1892, 1893, 1897–1900; 9, 1901–1903. Data from 10 establishments 1904; 16, 1905; 17, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	91.7	104.3	85.3
1891	100.0	97.3	101.3
1892	100.0	101.6	92.4
1893	100.0	99.2	98.1
1894	100.0	99.3	97.7
1895	100.0	99.9	102.0
1896	100.0	99.9	108.3
1897	100.0	99.6	101.1
1898	100.0	99.6	104.0
1899	100.0	99.6	110.8
1900	116.7	88.5	121.4
1901	116.7	99.4	129.6
1902	116.7	99.4	134.7
1903	125.0	89.5	144.4
1904	141.3	82.2	133.1
1905	141.3	82.4	137.9
1906	141.3	82.8	146.0
1907	144.9	83.2	147.6

BOTTOM MAKERS, Male.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 5 establishments 1890; 7, 1891–1893, 1897–1900; 6, 1894–1896; 8, 1901–1903. Data from 10 establishments 1904; 16, 1905; 17, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	91.7	103.7	126.0
1891	100.0	99.8	117.7
1892	100.0	101.6	120.3
1893	100.0	100.7	105.8
1894	100.0	99.3	98.6
1895	100.0	99.3	100.4
1896	100.0	99.3	95.2
1897	100.0	98.7	78.2
1898	100.0	98.9	79.8
1899	100.0	98.7	78.0
1900	100.0	94.0	90.2
1901	100.0	94.9	105.5
1902	100.0	94.9	116.4
1903	91.7	99.7	122.2
1904	88.9	98.8	101.7
1905	88.9	98.8	107.3
1906	87.0	98.3	116.0
1907	88.8	98.4	113.3

LADLE LINERS, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890; 7, 1891, 1894–1896; 8, 1892, 1893, 1897–1900; 9, 1901–1903. Data from 10 establishments 1904; 16, 1905; 17, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	106.7	91.5	122.4
1891	100.0	101.1	111.4
1892	100.0	100.7	117.7
1893	106.7	97.6	113.7
1894	100.0	103.4	92.4
1895	100.0	103.4	95.1
1896	100.0	103.4	89.5
1897	106.7	98.0	86.4
1898	100.0	102.9	81.2
1899	106.7	98.0	99.0
1900	113.3	93.8	101.0
1901	113.3	95.1	108.4
1902	113.3	95.1	116.4
1903	120.0	99.8	127.6
1904	106.7	97.7	106.8
1905	106.7	98.1	116.8
1906	101.6	98.8	128.1
1907	104.0	99.1	129.3

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

IRON AND STEEL, BESSEMER CONVERTING—Concluded.

MELTERS, Male.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 5 establishments 1890; 6, 1891, 1894–1896; 7, 1892, 1898, 1897–1900; 8, 1901–1903. Data from 10 establishments 1904; 13, 1905; 14, 1906; 15, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1899	100.0	93.9	117.4
1891	121.4	95.1	121.6
1892	100.0	104.9	112.8
1893	100.0	101.5	102.5
1894	100.0	100.1	92.2
1895	100.0	100.1	94.1
1896	100.0	100.1	85.4
1897	100.0	101.4	87.0
1898	100.0	101.4	92.4
1899	100.0	101.4	93.8
1900	150.0	92.7	106.8
1901	121.4	105.4	97.4
1902	121.4	105.4	109.7
1903	121.4	105.4	122.3
1904	148.7	93.4	98.2
1905	153.4	92.3	104.8
1906	156.2	92.9	114.2
1907	164.4	93.9	109.2

STEEL POURERS, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890; 7, 1891, 1894–1896; 8, 1892, 1893, 1897–1900; 9, 1901–1903. Data from 10 establishments 1904; 14, 1905; 16, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1899	100.0	98.1	112.0
1891	100.0	97.7	123.1
1892	100.0	101.2	118.2
1893	100.0	97.8	106.8
1894	100.0	97.7	94.9
1895	100.0	97.7	94.4
1896	94.1	103.1	81.7
1897	94.1	102.9	86.6
1898	94.1	102.9	88.0
1899	94.1	102.9	94.3
1900	117.6	85.8	109.0
1901	117.6	87.7	122.2
1902	117.6	87.7	133.6
1903	117.6	87.7	137.8
1904	114.1	86.5	121.2
1905	121.7	88.1	137.2
1906	119.4	88.1	149.5
1907	121.6	85.4	146.3

VESSEL MEN, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890; 7, 1891, 1894–1896; 8, 1892, 1893, 1897–1900; 9, 1901–1903. Data from 10 establishments 1904; 16, 1905; 17, 1906, 1907.]

Average 1890–99...	100.0	100.0	100.0	1899	100.0	100.4	89.6
1890	107.1	100.1	116.9	1900	114.3	92.7	108.7
1891	107.1	97.7	120.1	1901	114.3	93.9	115.7
1892	107.1	100.7	112.6	1902	114.3	93.9	126.0
1893	107.1	98.2	106.3	1903	114.3	93.9	136.3
1894	100.0	100.7	100.0	1904	99.7	87.8	127.1
1895	100.0	100.7	98.0	1905	97.9	87.5	135.9
1896	100.0	100.7	94.8	1906	97.9	88.1	148.7
1897	100.0	100.4	78.3	1907	95.0	83.4	150.9
1898	100.0	100.4	83.3				

IRON AND STEEL, BLAST FURNACE.

CINDER SNAPPERS, Male.

[Data for employees from 18 establishments 1890–1903. Data for hours and wages from 19 establishments 1890–1893, 1896–1903; 18, 1894, 1895. Data from 22 establishments 1904; 23, 1905; 25, 1906; 26, 1907.]

Average 1890–99...	100.0	100.0	100.0	Average 1890–99..	100.0	100.0	100.0
1890	103.8	100.0	102.6	1890	97.0	100.0	104.0
1891	100.0	100.0	102.7	1891	98.5	100.0	104.1
1892	102.5	100.0	105.7	1892	104.5	100.0	105.8
1893	97.5	100.0	102.9	1893	101.5	100.0	104.2
1894	96.9	100.0	90.8	1894	98.5	100.0	92.5
1895	100.6	100.0	96.3	1895	97.0	100.0	94.8
1896	99.4	100.0	102.5	1896	101.5	100.0	99.1
1897	98.1	100.0	96.4	1897	98.5	100.0	96.3
1898	99.4	100.0	95.3	1898	101.5	100.0	96.4
1899	100.6	100.0	106.1	1899	101.5	100.0	102.9
1900	101.9	100.0	109.9	1900	104.5	100.0	109.0
1901	107.5	100.0	112.9	1901	106.1	100.0	109.1
1902	97.5	100.0	113.0	1902	112.1	100.0	113.8
1903	98.1	100.0	116.9	1903	113.6	100.0	118.0
1904	98.6	98.6	114.2	1904	116.7	100.0	114.0
1905	100.5	98.6	120.5	1905	127.5	100.0	118.5
1906	105.0	98.6	122.0	1906	135.6	100.0	121.0
1907	113.7	98.6	127.7	1907	166.1	100.0	126.8

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

IRON AND STEEL, BLAST FURNACE—Concluded.

KEEPERS, Male.

[Data for employees from 18 establishments 1890–1903. Data for hours and wages from 19 establishments 1890–1893, 1896–1903; 18, 1894, 1895. Data from 22 establishments 1904; 23, 1905; 25, 1906; 26, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	92.7	100.0	106.3
1891	95.1	100.0	108.5
1892	106.1	100.0	108.8
1893	98.8	100.0	106.5
1894	100.0	100.0	92.5
1895	100.0	100.0	97.3
1896	96.3	100.0	99.0
1897	96.3	100.0	91.2
1898	104.9	100.0	91.1
1899	106.1	100.0	98.7
1900	104.9	100.0	103.6
1901	109.8	100.0	104.1
1902	114.6	100.0	108.9
1903	113.4	100.0	111.8
1904	114.4	100.0	105.4
1905	119.0	100.0	110.3
1906	125.9	100.0	111.9
1907	140.4	100.0	116.9

KEEPERS' HELPERS, Male.

[Data for employees from 18 establishments 1890–1903. Data for hours and wages from 19 establishments 1890–1893, 1896–1903; 18, 1894, 1895. Data from 22 establishments 1904; 23, 1905; 25, 1906; 26, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	89.7	100.0	105.1
1891	89.7	100.0	107.1
1892	108.1	100.0	108.3
1893	99.1	100.0	106.9
1894	99.6	100.0	88.6
1895	98.2	100.0	98.6
1896	98.7	100.0	100.9
1897	99.6	100.0	90.9
1898	105.8	100.0	92.2
1899	109.4	100.0	101.4
1900	107.6	100.0	105.3
1901	113.9	100.0	105.6
1902	114.8	100.0	109.8
1903	107.2	100.0	113.4
1904	103.0	100.0	106.0
1905	111.4	100.0	110.7
1906	119.5	100.0	112.9
1907	132.3	100.0	118.0

TOP FILLERS, Male.

[Data for employees from 16 establishments 1890–1903. Data for hours and wages from 17 establishments 1890–1893, 1896–1903; 16, 1894, 1895. Data from 19 establishments 1904–1907.]

Average 1890–99	100.0	100.0	100.0	1899	103.0	100.0	105.1
1890	87.5	100.0	103.8	1900	101.8	100.0	108.7
1891	92.3	100.0	103.9	1901	95.2	100.0	108.6
1892	109.5	100.0	106.8	1902	82.1	100.0	110.3
1893	101.8	100.0	105.4	1903	76.2	100.0	112.0
1894	104.2	100.0	92.5	1904	68.2	99.2	108.2
1895	105.4	100.0	93.7	1905	65.2	104.2	103.2
1896	98.8	100.0	99.1	1906	63.0	104.1	103.1
1897	98.8	100.0	95.1	1907	65.6	104.2	110.0
1898	101.2	100.0	94.7				

LEATHER.

COLORERS, Male.

[Data from 14 establishments 1890–1903; 23, 1904; 27, 1905; 30, 1906; 34, 1907.]

Average 1890–99	100.0	100.0	100.0	1899	126.4	99.9	101.2
1890	94.3	100.1	95.4	1900	119.8	100.0	103.6
1891	91.5	100.0	97.1	1901	104.7	99.7	105.6
1892	111.3	99.7	98.2	1902	95.3	99.5	109.0
1893	74.5	100.2	99.7	1903	104.7	99.6	110.6
1894	118.9	99.9	98.4	1904	94.7	100.0	111.0
1895	110.4	99.9	99.2	1905	94.3	100.1	108.7
1896	81.1	100.1	102.9	1906	102.8	100.2	110.0
1897	88.7	100.1	105.4	1907	86.2	100.2	116.1
1898	101.9	100.1	102.4				

FLESHERS, Male.

[Data for employees from 31 establishments 1890–1903. Data for hours and wages from 31 establishments 1890, 1891; 32, 1892–1903. Data from 38 establishments 1904; 49, 1905, 54, 1906; 60, 1907.]

Average 1890–99	100.0	100.0	100.0	1899	109.9	99.9	97.3
1890	103.8	100.0	105.8	1900	106.6	99.9	101.0
1891	98.9	99.9	104.6	1901	104.9	100.0	102.4
1892	106.0	99.9	104.4	1902	111.5	100.0	103.4
1893	98.9	100.0	103.8	1903	122.0	100.7	105.3
1894	98.4	100.0	97.2	1904	109.1	99.4	107.5
1895	103.3	100.1	95.7	1905	113.0	100.1	103.1
1896	94.5	100.1	98.2	1906	102.3	100.0	107.3
1897	93.4	100.1	96.1	1907	99.7	100.0	108.7
1898	94.5	100.1	97.2				

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

LEATHER—Continued.

GLAZERS, Male.

[Data for employees from 9 establishments 1890–1903. Data for hours and wages from 10 establishments 1890, 1891, 1894–1903; 9, 1892, 1893. Data from 18 establishments 1904; 20, 1905; 19, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1890.....	58.7	99.9	97.8
1891.....	77.8	99.9	96.4
1892.....	86.8	99.8	98.4
1893.....	74.6	99.8	91.3
1894.....	103.2	99.9	96.0
1895.....	101.1	100.1	106.2
1896.....	128.6	100.2	100.9
1897.....	126.5	100.2	101.1
1898.....	110.1	100.2	105.6
1899.....	134.4	100.0	106.5
1900.....	142.3	100.0	105.1
1901.....	133.3	100.2	114.5
1902.....	127.5	100.1	117.5
1903.....	171.4	100.2	130.1
1904.....	160.9	100.1	125.5
1905.....	164.9	100.2	124.8
1906.....	185.3	100.2	120.3
1907.....	165.9	100.5	124.4

GLAZERS, Female.

[Data for employees from 1 establishment 1890–1903. Data for hours and wages from 1 establishment 1890, 1891; 2, 1892–1894; 3, 1895–1903. Data from 6 establishments 1904; 7, 1905; 9, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1890.....	17.1	100.1	101.1
1891.....	46.3	100.1	98.5
1892.....	48.8	100.1	94.6
1893.....	12.2	100.1	92.5
1894.....	24.4	100.1	98.1
1895.....	85.4	99.9	97.8
1896.....	68.3	99.9	106.4
1897.....	103.8	99.9	108.9
1898.....	363.4	100.0	97.5
1899.....	231.7	99.9	104.4
1900.....	261.0	100.0	107.2
1901.....	212.2	100.0	116.5
1902.....	168.3	100.0	126.6
1903.....	241.5	100.0	125.1
1904.....	405.8	100.0	133.6
1905.....	389.1	100.0	132.6
1906.....	387.4	100.0	133.6
1907.....	498.1	100.0	140.8

LIMERS, Male.

[Data for employees from 29 establishments 1890–1903. Data for hours and wages from 29 establishments 1890, 1891; 30, 1892–1903. Data from 38 establishments 1904; 44, 1905; 46, 1906; 58, 1907.]

Average 1890–99...	100.0	100.0	100.0
1890.....	91.9	99.6	105.5
1891.....	95.7	99.6	103.5
1892.....	102.7	99.7	104.3
1893.....	87.1	99.6	102.8
1894.....	94.6	99.8	98.4
1895.....	98.4	100.1	97.9
1896.....	96.2	100.1	96.1
1897.....	105.9	100.6	95.5
1898.....	103.8	100.5	95.8
1899.....	123.1	100.5	99.9
1900.....	120.4	100.5	101.9
1901.....	125.8	100.6	101.4
1902.....	133.9	100.6	105.1
1903.....	148.4	100.3	106.4
1904.....	145.2	99.6	106.1
1905.....	150.9	99.9	106.6
1906.....	163.7	100.0	109.6
1907.....	145.3	100.0	111.9

ROLLERS, Male.

[Data from 6 establishments 1890–1903; 14, 1904; 22, 1905; 24, 1906; 27, 1907.]

Average 1890–99..	100.0	100.0	100.0
1890.....	100.0	100.0	100.0
1891.....	100.0	100.0	100.0
1892.....	100.0	100.0	100.0
1893.....	100.0	100.0	99.6
1894.....	100.0	100.0	99.6
1895.....	105.3	99.9	101.1
1896.....	100.0	100.0	99.6
1897.....	100.0	100.0	99.6
1898.....	100.0	100.0	99.6
1899.....	105.3	99.9	101.1
1900.....	110.5	100.0	100.2
1901.....	121.1	100.0	103.5
1902.....	121.1	100.0	106.1
1903.....	121.1	100.0	106.1
1904.....	121.1	95.5	113.6
1905.....	123.9	95.8	116.1
1906.....	134.1	96.1	115.6
1907.....	134.1	96.0	120.1

SETTERS OUT, Male.

[Data from 15 establishments 1890–1903; 28, 1904; 31, 1905; 34, 1906; 40, 1907.]

Average 1890–99...	100.0	100.0	100.0
1890.....	84.0	100.2	103.6
1891.....	91.8	100.1	103.0
1892.....	117.2	100.0	98.6
1893.....	66.8	100.5	107.8
1894.....	116.4	99.9	96.5
1895.....	106.7	100.0	96.5
1896.....	63.4	100.1	99.9
1897.....	118.3	99.8	96.9
1898.....	107.5	99.9	95.4
1899.....	127.2	99.4	101.9
1900.....	124.3	99.5	101.5
1901.....	131.0	99.6	103.0
1902.....	122.0	99.6	102.7
1903.....	114.9	99.6	105.5
1904.....	103.3	99.2	108.3
1905.....	102.7	99.8	111.1
1906.....	112.9	99.8	111.4
1907.....	102.1	99.8	114.7

SHAVERS, Male.

[Data from 16 establishments 1890–1903; 24, 1904; 32, 1905; 33, 1906; 37, 1907.]

Average 1890–99..	100.0	100.0	100.0
1890.....	95.6	100.4	112.2
1891.....	115.6	100.5	114.0
1892.....	114.4	100.4	111.9
1893.....	96.7	99.6	115.0
1894.....	97.8	99.5	101.0
1895.....	94.4	99.5	97.2
1896.....	78.9	99.2	89.0
1897.....	87.8	100.3	86.5
1898.....	111.1	100.4	84.7
1899.....	104.4	100.2	88.2
1900.....	112.2	100.3	87.5
1901.....	113.3	100.2	89.4
1902.....	97.8	100.3	92.3
1903.....	108.9	100.3	94.3
1904.....	115.2	101.0	96.9
1905.....	136.7	101.7	96.0
1906.....	142.4	101.7	95.2
1907.....	133.6	101.8	97.0

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

LEATHER—Concluded.

STAKERS, Male.

[Data from 8 establishments 1890–1903; 17, 1904; 20, 1905; 21, 1906; 23, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	69.5	100.1	92.1
1891	89.2	99.9	100.8
1892	112.6	99.9	105.3
1893	106.6	99.9	105.0
1894	104.2	100.0	102.1
1895	111.4	100.0	102.4
1896	89.8	100.0	100.0
1897	96.4	100.1	96.0
1898	107.2	100.2	94.9
1899	114.4	100.0	101.6
1900	86.2	100.1	71.6
1901	123.4	100.1	76 5
1902	77.8	100.2	74.1
1903	83.8	100.3	73.4
1904	83.5	100.0	75.1
1905	91.2	100.7	75.4
1906	102.8	100.7	75.8
1907	97.5	100.9	75.5

TANYARD HANDS, Male.

[Data from 19 establishments 1890–1903; 37, 1904; 52, 1905; 55, 1906; 60, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1899	91.7	99.5	103.5
1891	92.6	99.2	105.1
1892	101.8	99.4	105.3
1893	102.5	99.6	103.8
1894	97.7	99.7	98.2
1895	98.6	100.0	98.6
1896	92.8	100.2	97.0
1897	98.0	100.6	97.8
1898	111.3	101.1	96.5
1899	112.4	100.5	97.0
1900	108.8	100.5	100.2
1901	114.0	100.5	101.0
1902	109.0	100.5	104.5
1903	113.7	100.3	107.1
1904	125.5	99.8	108.2
1905	135.0	100.0	109.2
1906	144.2	100.0	111.2
1907	136.8	100.0	113.9

UNHAIRERS, Male.

[Data from 11 establishments 1890–1903; 30, 1904; 45, 1905; 50, 1906; 58, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	91.6	99.5	105.6
1891	89.4	99.6	104.4
1892	95.5	99.4	104.4
1893	103.4	99.4	102.0
1894	95.0	99.6	95.6
1895	94.4	100.2	96.6
1896	102.2	99.9	98.4
1897	106.7	100.8	99.7
1898	112.3	100.8	97.2
1899	108.9	100.8	96.0
1900	114.5	100.7	99.1
1901	124.0	100.8	101.2
1902	129.1	100.7	105.6
1903	126.8	99.8	105.8
1904	108.7	99.9	104.1
1905	119.1	100.4	108.2
1906	106.0	100.2	111.3
1907	89.3	100.2	108.4

LIQUORS, MALT.

BOTTLERS, Male.

[Data from 23 establishments 1890–1903; 40, 1904; 35, 1905; 38, 1906; 43, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	96.0	100.1	98.3
1891	90.4	100.1	102.7
1892	96.0	100.1	99.5
1893	99.8	100.1	98.2
1894	100.7	100.1	100.6
1895	87.2	100.1	101.6
1896	100.5	100.1	99.4
1897	103.2	100.0	99.8
1898	105.4	99.1	99.9
1899	121.6	100.1	99.9
1900	321.1	92.8	117.9
1901	187.8	93.2	115.8
1902	208.6	91.2	124.4
1903	243.6	91.6	127.3
1904	244.6	90.6	131.3
1905	249.5	89.9	133.0
1906	279.0	88.8	132.9
1907	301.7	84.7	150.1

CELLAR MEN, Male.

[Data from 47 establishments 1890–1903; 57, 1904; 51, 1905; 52, 1906; 55, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	97.2	100.6	96.5
1891	96.6	100.3	97.9
1892	101.0	100.4	98.2
1893	101.0	100.2	99.7
1894	98.2	100.2	100.3
1895	98.4	100.2	100.5
1896	99.1	100.1	101.3
1897	104.2	99.8	101.3
1898	102.1	99.2	101.9
1899	101.5	98.9	102.4
1900	105.2	97.4	104.7
1901	104.2	95.4	107.6
1902	106.4	92.4	113.6
1903	109.2	90.2	117.0
1904	114.2	89.4	118.7
1905	117.0	89.7	120.1
1906	116.1	86.7	125.0
1907	122.9	86.3	128.7

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

LIQUORS, MALT—Concluded.

COOPERS, Male.

[Data from 32 establishments 1890–1903; 41, 1904, 1906; 40, 1905; 44, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	69.6	101.1	99.0
1891	70.6	100.6	100.2
1892	75.9	101.0	98.6
1893	110.2	101.5	98.1
1894	114.9	101.5	99.4
1895	116.8	101.3	100.2
1896	108.3	97.2	100.1
1897	119.1	101.1	99.8
1898	103.3	97.2	102.7
1899	110.9	97.5	101.6
1900	94.7	98.2	107.4
1901	102.0	91.8	115.1
1902	103.0	85.9	125.7
1903	106.6	85.7	126.8
1904	103.4	85.3	127.4
1905	93.3	85.6	132.0
1906	96.0	84.3	136.9
1907	108.5	84.0	138.7

DRIVERS, Male.

[Data from 46 establishments 1890–1903; 58, 1904; 52, 1905; 53, 1906; 57, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	89.4	100.3	98.0
1891	93.6	100.1	99.9
1892	94.9	100.1	99.3
1893	99.1	100.0	100.0
1894	96.4	100.0	100.3
1895	101.9	100.1	100.2
1896	105.0	100.1	100.2
1897	107.1	99.8	100.3
1898	105.0	99.7	100.2
1899	108.0	99.7	100.5
1900	108.5	99.2	102.3
1901	112.4	98.1	104.3
1902	113.6	97.2	107.0
1903	117.4	96.9	107.5
1904	120.7	98.3	107.2
1905	123.9	97.2	109.3
1906	134.1	95.2	112.9
1907	139.5	94.5	114.2

FERMENTERS, Male.

[Data from 32 establishments 1890–1903; 45, 1904, 1906; 46, 1905; 49, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	86.6	102.2	97.9
1891	94.9	100.5	96.3
1892	92.4	100.5	98.2
1893	105.1	100.2	99.1
1894	107.6	100.3	99.4
1895	107.0	99.9	100.3
1896	100.6	99.9	100.5
1897	101.9	99.4	101.4
1898	101.3	98.6	102.4
1899	103.8	98.6	102.4
1900	108.3	98.2	106.8
1901	105.7	93.6	110.3
1902	110.2	90.2	116.2
1903	117.2	88.8	119.7
1904	120.6	88.4	121.7
1905	123.0	88.5	123.8
1906	130.9	86.5	127.7
1907	135.8	86.1	130.8

KETTLE MEN, Male.

[Data from 43 establishments 1890–1903; 56, 1904, 1907; 51, 1905; 52, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	96.6	101.2	96.0
1891	96.6	100.5	97.6
1892	100.6	100.5	97.8
1893	100.6	100.3	97.9
1894	103.4	100.4	98.9
1895	101.7	100.1	100.4
1896	99.4	100.0	101.0
1897	99.4	99.3	102.6
1898	102.9	98.9	103.8
1899	100.6	98.9	103.8
1900	105.7	97.7	105.1
1901	104.6	95.7	108.6
1902	108.6	90.8	115.4
1903	114.9	88.9	119.2
1904	114.4	88.3	122.1
1905	113.9	87.5	123.9
1906	118.9	85.6	127.7
1907	126.0	85.4	131.1

MALT HOUSE MEN, Male.

[Data from 21 establishments 1890–1903, 1905; 25, 1904; 19, 1906; 16, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	107.9	100.0	98.0
1891	99.0	99.9	99.5
1892	95.4	101.0	96.6
1893	97.4	100.7	98.7
1894	107.3	100.8	98.2
1895	99.7	100.9	98.7
1896	102.3	100.8	100.1
1897	97.7	99.9	101.8
1898	94.1	98.2	103.7
1899	99.0	97.9	104.7
1900	103.6	92.9	111.4
1901	105.0	91.8	114.3
1902	92.1	90.2	117.5
1903	95.7	88.6	120.7
1904	101.5	88.3	122.3
1905	100.6	88.7	123.6
1906	102.1	89.2	125.3
1907	113.5	88.4	131.4

WASHERS, Male.

[Data from 46 establishments 1890–1903; 56, 1904; 50, 1905; 51, 1906; 55, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	100.5	96.5
1891	101.6	100.3	96.6
1892	103.3	100.5	98.1
1893	112.6	100.7	98.5
1894	107.7	100.6	98.7
1895	103.1	100.3	99.8
1896	94.2	100.2	101.1
1897	92.0	99.8	101.4
1898	94.6	98.7	104.1
1899	90.6	98.4	105.0
1900	87.9	96.6	108.0
1901	101.7	93.7	113.2
1902	102.5	90.3	120.5
1903	104.3	88.6	124.4
1904	98.1	88.9	126.6
1905	104.4	88.5	129.4
1906	107.6	86.2	133.6
1907	112.3	85.6	138.6

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

LUMBER.

CANT SETTERS, GANG, Male.

[Data from 10 establishments 1890–1903; 14, 1904–1906; 15, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	100.2	101.3
1891	100.0	100.2	101.4
1892	100.0	100.2	101.6
1893	100.0	100.2	101.5
1894	100.0	100.2	101.4
1895	100.0	100.2	99.6
1896	103.2	100.0	95.4
1897	103.2	100.0	95.4
1898	90.3	99.4	99.2
1899	90.3	99.4	103.4
1900	90.3	99.4	104.3
1901	90.3	99.4	104.7
1902	90.3	97.8	106.7
1903	87.1	95.8	113.1
1904	90.2	96.1	113.7
1905	90.2	96.1	116.6
1906	90.2	94.7	122.1
1907	90.2	94.7	126.6

CARRIAGE MEN, Male.(a)

[Data from 34 establishments 1890–1903; 41, 1904; 62, 1905; 68, 1906; 74, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	96.4	100.4	102.2
1891	97.6	100.2	101.7
1892	98.2	100.2	102.1
1893	97.0	99.6	101.1
1894	96.5	99.5	98.1
1895	95.5	100.1	96.6
1896	97.6	100.1	97.7
1897	101.8	99.9	97.8
1898	105.9	100.0	99.4
1899	110.1	99.9	103.1
1900	109.5	99.6	104.2
1901	110.7	98.5	106.1
1902	120.1	98.1	111.1
1903	116.6	98.3	115.0
1904	111.2	98.0	117.3
1905	111.0	97.8	122.4
1906	107.2	96.8	128.6
1907	104.0	96.4	135.5

CHOPPERS AND SAWYERS, IN WOODS, Male.

[Data from 16 establishments 1890–1903; 24, 1904; 32, 1905; 33, 1906; 35, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	98.2	100.4	98.6
1891	100.6	100.4	97.8
1892	100.8	100.0	99.3
1893	95.0	99.9	95.9
1894	95.9	99.9	94.7
1895	97.0	99.8	98.5
1896	97.5	100.0	98.3
1897	103.1	99.8	101.0
1898	103.3	99.6	106.5
1899	108.1	100.2	109.4
1900	114.8	100.0	109.5
1901	115.1	99.9	113.2
1902	121.4	100.0	115.7
1903	135.2	99.8	116.3
1904	183.2	99.4	109.9
1905	190.1	99.4	115.4
1906	210.7	99.3	120.8
1907	225.2	99.4	125.7

EDGER MEN, Male.

[Data from 23 establishments 1890–1903; 43, 1904; 65, 1905, 1906; 72, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	94.2	100.8	104.8
1891	96.2	100.3	104.9
1892	96.2	100.3	106.1
1893	100.0	99.3	104.4
1894	92.3	99.3	97.7
1895	94.2	100.4	94.6
1896	98.1	100.3	97.6
1897	105.8	100.0	95.5
1898	107.7	99.8	96.2
1899	111.5	99.5	98.3
1900	119.2	99.2	102.9
1901	125.0	98.9	105.8
1902	128.8	98.4	105.9
1903	132.7	98.7	110.2
1904	132.7	98.2	110.5
1905	140.3	98.1	112.9
1906	141.2	97.1	117.3
1907	139.6	96.8	120.5

FILERS, Male.

[Data from 36 establishments 1890–1903; 37, 1904; 59, 1905; 61, 1906; 66, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	95.9	100.5	100.6
1891	97.3	100.2	101.2
1892	98.6	100.1	100.1
1893	97.3	99.5	102.0
1894	98.6	99.4	97.6
1895	95.9	100.2	96.4
1896	94.5	100.3	98.9
1897	102.7	100.1	98.8
1898	106.8	100.0	100.4
1899	105.5	99.9	104.1
1900	105.5	99.7	107.0
1901	113.7	99.5	108.2
1902	124.7	98.8	108.2
1903	124.7	98.4	112.8
1904	120.3	98.7	114.8
1905	120.3	98.6	117.8
1906	127.0	97.6	121.0
1907	123.2	97.2	127.1

LABORERS, Male.

[Data from 17 establishments 1890–1903; 42, 1904; 64, 1905; 66, 1906; 72, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	93.3	100.3	104.8
1891	98.5	100.1	104.4
1892	94.9	100.3	103.3
1893	95.5	100.1	102.8
1894	101.3	100.2	98.1
1895	101.0	100.0	95.6
1896	97.3	100.1	96.7
1897	100.7	100.0	94.8
1898	108.4	99.4	97.9
1899	109.1	99.5	101.2
1900	120.1	99.1	102.3
1901	129.6	98.8	105.8
1902	136.7	97.5	110.6
1903	140.7	96.8	113.1
1904	146.1	97.0	113.2
1905	160.8	96.9	116.6
1906	178.5	95.5	126.1
1907	169.6	95.2	131.6

a Including band setters and circular setters.

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

LUMBER—Concluded.

SAWYERS, BAND, Male.

[Data from 24 establishments 1890–1903; 30, 1904; 50, 1905; 52, 1906; 56, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	98.1	100.3	101.0
1891	96.2	99.9	101.9
1892	96.2	100.1	101.5
1893	94.2	100.2	102.5
1894	98.1	100.1	97.8
1895	101.9	100.0	99.8
1896	98.1	99.9	98.6
1897	98.1	99.9	99.5
1898	109.6	99.8	98.6
1899	111.5	99.9	101.0
1900	121.2	99.5	105.0
1901	121.2	99.5	107.7
1902	128.8	98.8	114.8
1903	128.8	98.7	122.0
1904	125.1	98.0	119.9
1905	130.7	97.9	123.7
1906	132.9	97.1	129.7
1907	126.6	96.8	133.0

SAWYERS, CIRCULAR, Male.

[Data from 17 establishments 1890–1903; 18, 1904; 25, 1905; 29, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	92.0	101.0	104.9
1891	92.0	100.6	105.4
1892	88.0	100.8	102.8
1893	88.0	98.6	102.9
1894	88.0	98.6	101.2
1895	92.0	100.6	100.0
1896	100.0	100.5	99.5
1897	108.0	100.1	95.0
1898	116.0	99.7	94.9
1899	124.0	99.4	93.7
1900	132.0	98.6	96.3
1901	132.0	98.2	99.6
1902	140.0	96.9	103.5
1903	140.0	96.9	107.2
1904	115.3	97.8	113.9
1905	121.4	97.7	118.0
1906	110.4	97.0	128.0
1907	110.4	96.8	126.9

SAWYERS, GANG, Male.

[Data from 17 establishments 1890–1903; 18, 1904; 19, 1905; 20, 1906; 21, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	96.3	100.0	97.7
1891	96.3	100.0	97.7
1892	96.3	100.0	98.5
1893	100.0	100.2	98.3
1894	100.0	100.2	93.5
1895	107.4	100.0	95.2
1896	107.4	100.0	95.5
1897	100.0	99.9	107.0
1898	100.0	99.9	106.7
1899	100.0	99.9	110.0
1900	100.0	99.5	113.6
1901	100.0	99.5	115.4
1902	100.0	98.8	119.3
1903	103.7	99.1	122.1
1904	107.3	98.7	120.1
1905	103.7	98.8	119.7
1906	107.0	97.2	124.4
1907	107.0	96.7	129.8

TRIMMERS, Male.

[Data from 7 establishments 1890–1903; 36, 1904; 58, 1905; 61, 1906; 66, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	73.4	100.4	113.7
1891	78.1	100.3	108.9
1892	87.5	100.1	106.1
1893	85.9	100.2	107.2
1894	79.7	100.1	97.2
1895	79.7	100.1	97.4
1896	100.0	99.9	90.5
1897	132.8	99.7	88.9
1898	131.3	99.7	94.5
1899	145.3	99.7	95.5
1900	154.7	99.7	98.9
1901	165.6	99.7	99.2
1902	151.6	99.7	96.2
1903	156.3	100.7	98.1
1904	174.1	99.8	104.4
1905	185.2	99.7	106.0
1906	187.0	98.9	109.7
1907	174.1	98.9	110.2

MARBLE AND STONE WORK.

BED RUBBERS, Male.

[Data from 29 establishments 1890–1903; 50, 1904; 57, 1905; 59, 1906; 63, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	104.8	101.6	96.8
1891	101.4	100.6	99.1
1892	104.8	100.6	97.8
1893	107.6	100.7	98.9
1894	92.4	100.2	99.5
1895	100.0	100.6	97.7
1896	90.3	99.4	102.0
1897	98.6	99.8	100.2
1898	99.3	99.9	99.4
1899	97.2	96.7	108.5
1900	97.9	96.9	108.8
1901	111.0	95.1	117.6
1902	117.9	94.0	124.6
1903	113.8	90.6	125.6
1904	110.5	89.9	126.1
1905	112.9	90.0	127.0
1906	109.8	91.0	125.6
1907	113.9	91.0	128.0

CARVERS, Male.

[Data from 28 establishments 1890–1903; 39, 1904; 52, 1905; 55, 1906; 64, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	95.8	100.1	99.2
1891	89.2	101.2	95.4
1892	93.3	98.5	99.8
1893	95.0	99.2	99.2
1894	114.2	102.8	96.3
1895	100.8	102.7	93.0
1896	99.2	101.2	103.8
1897	85.8	99.5	103.7
1898	95.0	100.0	102.4
1899	127.5	94.7	107.3
1900	139.2	94.1	108.0
1901	138.3	93.8	116.1
1902	121.7	92.7	125.0
1903	104.2	93.0	124.8
1904	100.1	92.9	123.9
1905	93.0	93.0	124.3
1906	108.4	92.4	125.7
1907	105.9	91.9	126.4

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TABLE H.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

MARBLE AND STONE WORK—Continued.

LABORERS, Male.

[Data from 18 establishments 1890-1903; 62, 1904; 91, 1905; 101, 1906; 124, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	105.9	103.0	99.9
1891	103.0	102.1	96.6
1892	109.4	101.6	100.4
1893	104.5	101.2	102.9
1894	94.1	99.7	100.1
1895	94.1	99.9	99.4
1896	97.0	99.9	99.7
1897	99.5	98.9	102.1
1898	98.5	99.1	102.1
1899	94.1	94.6	96.5
1900	85.6	100.4	99.4
1901	106.9	99.6	105.1
1902	107.9	98.9	108.6
1903	95.0	99.1	112.4
1904	101.8	99.5	111.9
1905	107.4	99.8	111.8
1906	108.7	98.5	113.3
1907	107.5	98.5	117.3

LETTERERS, Male.

[Data from 42 establishments 1890-1903; 38, 1904; 48, 1905; 53, 1906; 57, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	97.4	101.3	97.6
1891	98.7	100.4	98.0
1892	96.1	99.3	99.0
1893	100.0	99.4	97.8
1894	94.7	100.4	99.1
1895	101.3	100.3	99.5
1896	94.7	100.0	102.0
1897	101.3	100.2	101.9
1898	103.9	99.5	102.3
1899	105.3	99.3	102.7
1900	106.6	96.5	106.1
1901	111.8	96.0	108.8
1902	113.2	95.4	112.8
1903	110.5	91.6	118.0
1904	112.7	91.1	121.7
1905	117.5	90.9	126.0
1906	117.5	89.9	129.9
1907	114.3	89.5	132.7

MARBLE CUTTERS, Male.

[Data from 58 establishments 1890-1903; 71, 1904; 76, 1905; 77, 1906; 85, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	106.3	102.7	95.8
1891	109.2	100.1	101.9
1892	98.8	99.6	100.3
1893	96.6	99.7	99.7
1894	88.3	100.9	95.8
1895	89.5	100.6	95.8
1896	93.2	100.4	100.9
1897	95.4	99.9	101.8
1898	98.1	99.9	101.3
1899	124.8	96.1	106.7
1900	129.9	95.4	108.8
1901	130.2	95.2	115.5
1902	128.2	95.0	123.3
1903	133.6	93.0	129.6
1904	97.4	95.0	121.1
1905	106.4	95.1	122.6
1906	102.3	96.1	120.5
1907	104.1	95.0	126.4

MARBLE POLISHERS, Male.

[Data from 29 establishments 1890-1903; 48, 1904; 64, 1905; 67, 1906; 73, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	99.2	102.3	97.5
1891	105.7	101.5	96.7
1892	108.4	100.5	99.8
1893	99.6	100.5	100.0
1894	103.8	100.7	93.8
1895	101.5	100.8	93.1
1896	85.6	99.3	101.3
1897	89.4	99.1	102.0
1898	93.2	99.5	103.0
1899	111.8	95.8	112.7
1900	117.1	96.2	112.2
1901	119.4	95.8	118.4
1902	120.2	96.5	122.9
1903	120.5	93.8	128.2
1904	113.8	93.5	125.8
1905	103.0	93.8	127.1
1906	106.4	93.8	131.3
1907	116.6	93.6	141.0

SAWYERS, Male.

[Data from 35 establishments 1890-1903; 50, 1904; 53, 1905; 57, 1906; 66, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	97.8	101.7	95.6
1891	97.8	101.6	96.1
1892	98.9	101.7	95.4
1893	97.8	100.8	97.2
1894	98.9	100.7	98.2
1895	100.0	101.1	96.5
1896	101.1	98.7	104.2
1897	103.3	98.2	104.9
1898	103.3	98.0	105.3
1899	103.3	97.4	106.9
1900	105.5	96.8	108.4
1901	109.9	95.3	113.4
1902	105.5	95.8	111.4
1903	108.8	95.6	115.5
1904	107.2	94.5	120.2
1905	120.7	93.6	122.1
1906	125.7	93.4	125.6
1907	123.8	94.2	126.9

STONECUTTERS, GRANITE, Male.

[Data from 72 establishments 1890-1903; 83, 1904; 87, 1905; 89, 1906; 99, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	121.0	100.0	102.8
1891	113.5	99.7	104.8
1892	113.8	100.0	103.4
1893	100.4	100.8	99.7
1894	91.0	100.2	99.0
1895	88.4	99.9	99.5
1896	91.5	100.1	99.0
1897	87.5	100.5	97.1
1898	90.1	100.6	95.6
1899	103.0	98.1	99.1
1900	116.3	95.2	108.1
1901	109.9	94.8	106.6
1902	110.5	94.2	108.5
1903	116.1	92.3	116.5
1904	109.8	92.2	119.1
1905	96.3	92.6	116.7
1906	107.1	91.3	121.7
1907	107.5	91.1	126.5

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TABLE H.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

MARBLE AND STONE WORK—Concluded.

STONECUTTERS, SOFT STONE, Male.

[Data from 49 establishments 1890–1903; 64, 1904; 83, 1905, 1906; 92, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	110.3	103.1	100.5
1891	109.4	100.5	104.2
1892	105.1	100.3	103.9
1893	103.3	101.2	100.5
1894	91.4	100.8	97.2
1895	91.3	100.2	96.2
1896	98.8	99.7	97.0
1897	87.2	98.4	98.7
1898	115.9	97.7	101.9
1899	87.4	98.1	99.9
1900	85.8	98.5	100.4
1901	88.3	97.2	102.5
1902	96.3	96.9	108.6
1903	92.3	95.7	116.2
1904	100.3	95.7	117.2
1905	94.6	95.8	117.1
1906	95.3	95.8	118.8
1907	81.5	95.8	128.8

STONE POLISHERS, Male.

[Data from 22 establishments 1890–1903; 26, 1904; 30, 1905; 23, 1906; 35, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	98.0	101.5	100.3
1891	102.0	100.3	100.9
1892	98.0	99.8	103.3
1893	110.0	100.9	97.7
1894	92.0	101.0	93.8
1895	98.0	100.5	95.5
1896	104.0	98.1	100.7
1897	104.0	98.7	105.7
1898	102.0	99.4	102.4
1899	98.0	99.7	99.5
1900	100.0	97.3	95.7
1901	110.0	97.0	97.0
1902	118.0	94.4	101.2
1903	114.0	93.3	106.5
1904	119.4	93.4	105.8
1905	138.4	95.2	102.6
1906	141.0	94.8	104.8
1907	111.2	94.7	116.1

PAPER AND WOOD PULP.

BACK TENDERS, Male.

[Data from 11 establishments 1890–1903; 15, 1904; 25, 1905, 1907; 24, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1899	85.4	100.4	97.1
1891	94.8	100.2	97.4
1892	91.7	100.3	98.1
1893	100.0	100.3	97.5
1894	93.8	100.0	98.9
1895	101.0	100.4	99.9
1896	102.1	100.4	98.5
1897	106.3	100.8	101.8
1898	117.7	101.2	101.9
1899	108.3	96.0	109.1
1900	119.8	95.0	110.0
1901	117.7	94.5	110.2
1902	120.8	92.6	111.7
1903	121.9	93.0	120.2
1904	123.4	90.6	125.1
1905	127.1	91.9	125.5
1906	129.0	91.8	125.7
1907	146.7	81.3	155.9

BEATERS, Male.

[Data from 14 establishments 1890–1903; 18, 1904; 28, 1905; 27, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1899	97.9	100.5	95.4
1891	102.6	100.3	98.9
1892	101.6	100.4	98.6
1893	99.5	100.9	98.5
1894	97.9	100.6	100.1
1895	95.2	100.6	99.9
1896	100.5	99.5	100.7
1897	100.5	100.6	100.4
1898	98.4	100.5	99.8
1899	104.8	96.2	107.5
1900	107.9	95.8	108.7
1901	108.5	92.2	114.1
1902	112.2	90.7	116.8
1903	120.1	89.2	123.2
1904	134.5	86.7	126.1
1905	137.1	88.0	127.9
1906	140.6	88.3	127.2
1907	162.8	79.0	144.1

BLEACHERS, Male.

[Data from 7 establishments 1890–1903; 8, 1904; 12, 1905; 13, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	119.1	99.1	96.0
1891	122.1	99.3	96.9
1892	129.4	99.3	98.8
1893	111.8	100.0	98.6
1894	104.4	99.4	98.1
1895	86.8	100.5	101.1
1896	92.6	101.1	100.1
1897	75.0	103.6	100.5
1898	72.1	103.9	99.9
1899	79.4	93.7	109.9
1900	86.8	101.6	106.6
1901	86.8	101.6	106.4
1902	91.2	94.5	108.6
1903	89.7	94.8	110.4
1904	101.7	94.3	111.0
1905	94.7	97.5	109.6
1906	98.1	97.1	109.3
1907	96.3	97.5	112.9

CALENDRERS, Male.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 5 establishments 1890–1892, 1894–1903; 4, 1893. Data from 7 establishments 1904; 15, 1905, 1906; 14, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	80.0	102.4	94.2
1891	92.7	101.7	93.2
1892	100.0	101.3	92.7
1893	110.9	99.9	98.9
1894	100.0	101.3	97.2
1895	100.0	101.3	102.6
1896	92.7	101.7	103.3
1897	89.1	102.2	101.9
1898	120.0	100.8	98.7
1899	114.5	87.5	117.0
1900	140.0	87.1	117.7
1901	169.1	85.5	122.5
1902	172.7	84.5	122.9
1903	190.9	85.1	127.6
1904	201.0	86.0	127.9
1905	236.8	84.0	132.7
1906	271.6	85.3	129.9
1907	315.0	85.8	134.4

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

PAPER AND WOOD PULP—Continued.

CALENDRERS, Female.

[Data from 1 establishment 1890–1904; 2, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1890	105.3	100.0	96.0
1891	105.3	100.0	107.3
1892	126.3	100.0	102.3
1893	126.3	100.0	109.7
1894	84.2	100.0	93.6
1895	105.3	100.0	91.0
1896	100.0	100.0	108.4
1897	94.7	100.0	95.9
1898	94.7	100.0	94.4
1899	68.4	100.0	101.1
1900	78.9	100.0	105.9
1901	78.9	100.0	101.0
1902	84.2	94.8	99.3
1903	100.0	94.8	97.7
1904	131.6	94.8	104.5
1905	118.0	94.8	107.2
1906	102.5	94.8	104.9
1907	52.8	94.8	121.1

CUTTERS, Female.

[Data from 6 establishments 1890–1903; 13, 1904; 20, 1905, 1907; 19, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1890	107.6	102.7	99.2
1891	127.2	101.7	99.0
1892	96.7	101.8	99.2
1893	103.3	99.2	101.9
1894	88.0	100.3	98.8
1895	96.7	99.6	99.2
1896	98.9	99.5	99.1
1897	97.8	99.6	99.4
1898	92.4	99.9	99.6
1899	89.1	95.9	105.0
1900	93.5	95.3	104.2
1901	97.8	94.5	105.0
1902	106.5	94.6	102.0
1903	110.9	93.9	109.0
1904	111.8	94.2	110.8
1905	113.8	94.4	114.7
1906	116.0	94.5	115.6
1907	110.6	101.2	118.9

FINISHERS, Male.

[Data from 14 establishments 1890–1903; 16, 1904; 25, 1905; 23, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1890	84.4	100.5	100.2
1891	87.5	100.4	101.9
1892	90.6	100.2	100.5
1893	101.6	99.0	103.7
1894	100.0	99.8	101.6
1895	93.8	100.0	100.9
1896	95.3	100.0	99.8
1897	112.5	99.6	97.3
1898	114.1	100.2	96.7
1899	115.6	100.2	97.4
1900	128.1	100.2	98.2
1901	128.1	100.3	98.8
1902	125.0	99.1	101.4
1903	150.0	98.1	105.8
1904	152.8	98.6	105.3
1905	153.6	98.9	107.0
1906	190.9	98.5	106.0
1907	193.4	95.3	114.8

CUTTERS, Male.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 6 establishments 1890–1892, 1894–1903; 5, 1893. Data from 10 establishments 1904; 18, 1905; 19, 1906; 20, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1890	74.6	101.6	99.8
1891	78.0	101.6	100.8
1892	84.7	101.6	100.4
1893	96.6	101.5	96.2
1894	113.6	101.5	98.1
1895	113.6	101.7	96.8
1896	110.2	101.7	96.6
1897	108.5	101.7	97.4
1898	111.9	101.7	97.6
1899	113.6	85.4	116.4
1900	116.9	85.0	116.7
1901	130.5	84.9	115.0
1902	132.2	84.9	118.2
1903	154.2	84.4	122.9
1904	137.9	81.5	131.8
1905	133.1	83.1	128.0
1906	136.0	84.8	126.7
1907	131.0	91.0	110.1

ENAMELERS, Male.

[Data from 2 establishments 1890–1904; 3, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1890	55.6	101.9	95.2
1891	77.8	101.9	96.3
1892	80.6	101.9	95.6
1893	116.7	101.9	98.2
1894	122.2	101.9	96.4
1895	105.6	101.9	97.2
1896	122.2	101.9	97.2
1897	113.9	101.9	97.2
1898	105.6	101.9	100.1
1899	88.9	82.8	126.8
1900	86.1	82.8	128.9
1901	94.4	82.7	134.8
1902	138.9	82.3	135.3
1903	152.8	82.3	142.1
1904	175.0	82.5	141.5
1905	189.6	82.2	140.9
1906	216.3	84.9	131.8
1907	374.3	82.5	144.7

FINISHERS, Female.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 5 establishments 1890–1892, 1894–1903; 4, 1893. Data from 6 establishments 1904; 11, 1905; 12, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1890	87.5	100.5	93.9
1891	112.5	100.2	105.2
1892	130.0	100.1	103.0
1893	122.5	99.6	105.0
1894	77.5	100.2	94.8
1895	92.5	99.8	99.6
1896	95.0	99.8	103.9
1897	92.5	99.8	98.5
1898	97.5	99.9	94.5
1899	90.0	100.1	101.2
1900	107.5	99.9	103.4
1901	105.0	100.0	100.6
1902	90.0	97.4	105.0
1903	107.5	96.9	107.4
1904	93.6	97.6	129.3
1905	95.5	97.1	133.3
1906	120.8	98.2	125.6
1907	134.6	97.6	134.9

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

PAPER AND WOOD PULP—Continued.

LABORERS, Male.

[Data from 4 establishments 1890–1903; 16, 1904; 28, 1905, 1907; 27, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	113.6	98.4	97.9
1891	109.0	98.9	98.7
1892	98.9	100.5	98.8
1893	100.0	100.8	97.5
1894	96.6	100.3	97.8
1895	103.4	101.4	99.5
1896	90.4	102.1	99.2
1897	93.8	101.5	99.9
1898	84.7	102.3	98.7
1899	108.5	93.8	112.2
1900	102.3	96.1	111.0
1901	134.5	91.7	115.5
1902	118.1	96.6	109.1
1903	127.1	96.2	118.5
1904	134.5	96.1	118.1
1905	142.3	96.4	119.5
1906	137.6	95.3	122.2
1907	149.8	94.5	125.2

MACHINE TENDERS, Male.

[Data for employees from 15 establishments 1890–1903. Data for hours and wages from 16 establishments 1890–1892, 1894–1903; 15, 1893. Data from 17 establishments 1904; 27, 1905, 1906; 28, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	89.9	100.6	97.1
1891	97.7	100.6	99.5
1892	97.7	100.0	100.0
1893	104.7	99.6	100.4
1894	97.7	99.9	99.7
1895	101.6	100.2	99.3
1896	102.3	100.3	98.6
1897	100.0	100.8	99.5
1898	101.6	101.0	100.0
1899	106.2	97.0	105.7
1900	118.6	97.9	104.1
1901	124.0	91.3	111.6
1902	124.8	88.9	113.4
1903	133.3	87.9	116.6
1904	141.4	84.7	120.1
1905	139.4	86.6	123.1
1906	142.3	86.3	123.7
1907	160.9	77.8	145.8

PRESS TENDERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890–1893; 4, 1894–1903. Data from 3 establishments 1904; 8, 1905; 7, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	116.7	100.0	97.9
1891	116.7	100.0	97.9
1892	116.7	100.0	97.9
1893	100.0	100.0	96.5
1894	91.7	100.0	101.5
1895	100.0	100.0	101.6
1896	100.0	100.0	101.6
1897	100.0	100.0	101.6
1898	91.7	100.0	101.5
1899	100.0	100.0	101.6
1900	108.3	100.0	104.0
1901	108.3	100.0	106.2
1902	125.0	100.0	106.2
1903	100.0	100.0	132.1
1904	90.0	100.0	132.9
1905	80.5	100.2	132.0
1906	97.9	99.6	132.3
1907	103.3	89.8	153.6

PULP GRINDERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 4 establishments 1890–1892, 1894–1903; 3, 1893. Data from 5 establishments 1904; 10, 1905; 9, 1906; 8, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	93.5	100.0	99.8
1891	93.5	100.0	99.8
1892	93.5	100.0	99.8
1893	103.2	100.0	96.4
1894	103.2	100.0	99.9
1895	96.8	100.0	100.3
1896	103.2	100.0	101.1
1897	96.8	100.0	101.1
1898	96.8	100.0	101.1
1899	103.2	100.0	100.7
1900	103.2	100.0	100.7
1901	103.2	100.0	101.5
1902	103.2	100.0	101.5
1903	93.5	100.0	115.4
1904	114.9	83.7	127.8
1905	106.6	92.3	121.4
1906	108.1	92.2	121.8
1907	141.2	72.8	150.8

RAG SORTERS, Male.

[Data from 2 establishments 1890–1905, 1907; 3, 1906.]

Average 1890–99	100.0	100.0	100.0
1890	102.0	98.6	94.5
1891	90.0	99.5	97.4
1892	110.0	98.1	99.8
1893	104.0	98.9	101.1
1894	92.0	99.8	103.1
1895	98.0	99.8	102.4
1896	104.0	100.2	99.2
1897	118.0	98.5	101.9
1898	98.0	103.3	98.0
1899	88.0	103.3	102.3
1900	114.0	102.3	101.2
1901	88.0	96.2	103.1
1902	110.0	103.5	101.0
1903	134.0	103.2	103.8
1904	159.4	102.9	103.5
1905	91.1	112.5	97.4
1906	89.0	112.4	97.9
1907	98.1	116.3	95.1

RAG SORTERS, Female.

[Data from 5 establishments 1890–1903; 7, 1904; 11, 1905, 1907; 12, 1906.]

Average 1890–99	100.0	100.0	100.0
1890	94.2	101.2	97.6
1891	108.3	99.9	100.2
1892	109.6	101.0	99.8
1893	112.8	99.5	99.5
1894	90.4	98.6	102.3
1895	104.5	99.3	101.5
1896	108.3	98.9	100.3
1897	86.5	100.1	99.2
1898	86.5	101.0	101.4
1899	100.6	100.5	97.6
1900	117.9	100.5	99.8
1901	92.3	102.6	100.1
1902	87.2	101.1	96.7
1903	111.5	101.6	97.6
1904	127.8	101.8	103.5
1905	123.7	104.6	100.1
1906	125.5	102.0	105.6
1907	128.0	103.6	118.5

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TABLE H.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

PAPER AND WOOD PULP—Concluded.

WOOD COOKERS, Male.

[Data for employees from 1 establishment 1890–1903. Data for hours and wages from 1 establishment 1890–1893; 2, 1894–1903. Data from 4 establishments 1904; 9, 1905, 1906; 8, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	75.0	97.5	95.3
1891	68.8	97.5	94.7
1892	56.3	97.5	98.3
1893	43.8	97.5	99.8
1894	25.0	110.5	97.7
1895	100.0	104.0	99.7
1896	100.0	104.0	99.6
1897	175.0	101.8	98.2
1898	187.5	101.6	99.2
1899	137.5	88.4	119.3
1900	162.5	87.2	122.3
1901	200.0	85.8	121.4
1902	200.0	85.8	119.3
1903	118.8	87.3	131.1
1904	129.9	84.0	135.2
1905	132.0	85.9	142.3
1906	119.2	84.7	145.4
1907	102.5	78.6	170.7

WOOD PREPARERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 4 establishments 1890–1892, 1901–1903; 3, 1893; 5, 1894–1900. Data from 7 establishments 1904; 12, 1905; 11, 1906; 10, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	63.2	99.3	101.4
1891	63.2	99.3	100.6
1892	73.7	100.3	100.4
1893	100.0	100.8	103.1
1894	94.7	100.6	97.7
1895	105.3	100.3	98.4
1896	131.6	100.3	98.7
1897	121.1	100.2	98.8
1898	136.8	100.4	98.7
1899	131.6	98.5	102.0
1900	126.3	98.2	103.8
1901	126.3	96.7	114.2
1902	126.3	96.7	118.1
1903	110.5	95.3	133.6
1904	124.8	93.6	134.3
1905	130.8	94.4	135.6
1906	107.5	95.0	138.1
1907	113.4	88.0	165.9

PLANING MILL.

CARPENTERS, Male.

[Data from 65 establishments 1890–1903; 96, 1904; 93, 1905; 97, 1906; 102, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	94.7	101.9	98.7
1891	94.3	101.1	100.0
1892	100.3	101.3	99.2
1893	98.7	100.2	100.2
1894	92.1	100.1	98.7
1895	92.7	99.8	98.0
1896	104.7	98.0	100.8
1897	101.7	99.1	101.1
1898	103.4	99.4	102.3
1899	116.9	99.0	102.8
1900	122.5	98.4	106.7
1901	129.9	98.2	108.0
1902	132.8	97.0	113.6
1903	135.9	96.5	119.3
1904	138.4	96.3	122.4
1905	144.0	96.3	123.4
1906	144.8	96.0	126.6
1907	142.4	95.6	131.6

FRAMERS, Male.

[Data from 26 establishments 1890–1903; 35, 1904; 33, 1905; 34, 1906; 39, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	87.2	100.5	100.3
1891	91.0	100.0	101.5
1892	96.3	100.0	103.0
1893	95.2	99.8	102.3
1894	89.9	100.5	98.1
1895	105.9	99.8	97.0
1896	102.7	100.2	95.9
1897	105.9	100.2	97.6
1898	110.6	100.0	100.2
1899	113.3	98.9	104.0
1900	111.2	99.2	105.2
1901	119.1	98.6	108.6
1902	115.4	97.9	111.3
1903	123.4	97.9	114.2
1904	126.9	98.0	113.7
1905	133.5	98.2	116.2
1906	134.0	97.9	117.9
1907	122.8	97.7	119.5

GLAZIERS, Male.

[Data from 6 establishments 1890–1903; 34, 1904; 40, 1905; 43, 1906; 47, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	81.8	100.5	95.7
1891	81.8	100.5	99.0
1892	81.8	100.5	100.5
1893	81.8	100.5	104.7
1894	90.9	99.5	102.8
1895	100.0	99.6	97.7
1896	100.0	99.6	96.8
1897	100.0	99.6	100.7
1898	100.0	99.6	99.8
1899	136.4	100.0	102.4
1900	145.5	98.3	106.7
1901	181.8	98.3	105.7
1902	200.0	98.6	103.1
1903	254.5	99.1	107.0
1904	240.9	98.4	111.0
1905	287.2	98.1	113.2
1906	322.7	95.7	121.6
1907	304.9	94.3	129.4

LABORERS, Male.

[Data from 13 establishments 1890–1903; 80, 1904; 91, 1905; 98, 1906; 107, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	85.9	100.1	102.4
1891	89.8	100.1	105.3
1892	88.7	100.1	101.5
1893	87.1	99.9	98.3
1894	93.8	100.0	94.1
1895	102.0	100.0	95.9
1896	105.1	99.8	96.5
1897	103.5	99.9	96.0
1898	107.0	100.0	101.5
1899	135.9	100.2	108.5
1900	110.2	99.9	102.8
1901	134.4	100.0	110.8
1902	127.7	100.0	110.8
1903	115.6	99.9	113.3
1904	121.4	100.4	110.4
1905	129.4	100.0	112.7
1906	139.2	97.9	117.7
1907	139.5	98.0	121.4

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

PLANING MILL—Concluded.

MACHINE WOODWORKERS, Male.

[Data from 92 establishments 1890–1903; 110, 1904; 112, 1905; 118, 1906; 120, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1899	97.3	101.2	98.4
1891	97.4	100.6	99.2
1892	98.4	100.6	99.7
1893	97.9	100.1	99.6
1894	96.0	100.4	97.4
1895	97.8	99.6	98.8
1896	99.8	99.4	99.7
1897	101.9	99.7	101.0
1898	105.8	99.2	102.0
1899	107.3	99.0	104.0
1900	111.4	98.9	106.6
1901	113.7	98.7	108.7
1902	120.8	97.3	113.0
1903	122.2	96.7	116.3
1904	128.6	96.7	115.7
1905	133.2	96.7	117.4
1906	136.3	95.6	121.2
1907	145.7	95.2	125.1

SAWYERS, Male. (a)

[Data from 61 establishments 1890–1903; 84, 1904; 94, 1905; 96, 1906; 104, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	96.2	101.6	99.5
1891	96.6	100.4	100.5
1892	98.7	100.4	100.7
1893	98.4	100.2	100.4
1894	97.8	101.2	97.5
1895	98.7	98.8	99.1
1896	100.1	99.4	98.9
1897	101.7	99.6	99.7
1898	103.7	99.3	100.6
1899	107.4	99.0	103.1
1900	109.7	99.8	104.0
1901	112.2	99.4	107.3
1902	113.7	98.2	111.4
1903	116.8	97.9	113.1
1904	119.7	97.2	115.0
1905	123.5	97.1	116.6
1906	131.5	96.2	120.1
1907	129.4	96.2	122.4

POTTERY.

DIPPERS, Male.

[Data from 4 establishments 1890–1904; 6, 1905; 12, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	100.0	97.6	95.1
1891	100.0	97.6	95.1
1892	100.0	97.6	98.3
1893	100.0	97.6	106.2
1894	100.0	97.6	103.7
1895	80.0	99.7	97.4
1896	80.0	99.7	88.9
1897	80.0	104.2	104.9
1898	80.0	104.2	104.9
1899	80.0	104.2	107.4
1900	80.0	99.7	101.1
1901	80.0	101.9	109.6
1902	80.0	101.9	109.6
1903	80.0	101.9	113.5
1904	80.0	101.9	116.5
1905	80.0	101.9	123.8
1906	89.6	101.2	121.7
1907	92.3	101.3	122.9

JIGGER MEN, Male.

[Data from 3 establishments 1890–1903; 4, 1904; 6, 1905; 12, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	107.1	99.7	100.7
1891	107.1	99.7	101.2
1892	92.9	100.1	97.8
1893	121.4	99.4	104.7
1894	114.3	99.6	99.0
1895	78.6	100.7	98.6
1896	100.0	99.9	97.1
1897	85.7	100.4	92.2
1898	92.9	100.1	102.1
1899	85.7	100.4	111.6
1900	85.7	101.4	101.9
1901	85.7	100.4	108.8
1902	85.7	100.4	110.9
1903	107.1	96.1	113.2
1904	85.7	97.2	118.8
1905	89.8	97.2	122.3
1906	94.7	96.5	118.5
1907	98.1	96.4	114.0

KILN FIREMEN, Male.

[Data from 3 establishments 1890–1903; 4, 1904; 6, 1905; 13, 1906; 12, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	100.0	100.0	91.5
1891	100.0	100.0	91.5
1892	100.0	100.0	101.0
1893	100.0	100.0	101.0
1894	100.0	100.0	101.0
1895	100.0	100.0	95.3
1896	100.0	100.0	95.3
1897	100.0	100.0	114.2
1898	100.0	100.0	114.2
1899	100.0	100.0	95.3
1900	100.0	100.0	95.3
1901	100.0	100.0	95.3
1902	100.0	100.0	104.7
1903	100.0	100.0	110.4
1904	100.0	100.0	112.3
1905	113.0	102.7	108.4
1906	106.7	102.3	109.8
1907	106.7	102.3	109.8

KILN MEN, Male.

[Data from 5 establishments 1890–1904; 7, 1905; 13, 1906; 12, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	93.2	99.8	101.3
1891	104.5	99.2	104.2
1892	102.3	99.3	103.8
1893	102.3	99.3	104.0
1894	102.3	99.3	101.5
1895	100.0	99.4	102.2
1896	88.6	101.3	94.0
1897	97.7	100.6	96.2
1898	95.5	100.8	95.6
1899	106.8	101.1	97.3
1900	113.6	100.7	98.7
1901	102.3	101.4	95.7
1902	104.5	101.3	98.6
1903	102.3	100.9	98.4
1904	99.5	100.7	99.6
1905	97.9	100.8	101.1
1906	96.1	101.3	104.1
1907	88.0	101.5	108.4

a Including all classes of sawyers.

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

POTTERY—Concluded.

MOLD MAKERS, Male.

[Data from 5 establishments 1890–1904; 7, 1905; 12, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	100.3	99.7
1891	100.0	100.3	99.3
1892	100.0	100.3	99.1
1893	100.0	100.3	94.1
1894	100.0	100.3	97.8
1895	100.0	100.3	97.5
1896	100.0	100.3	97.3
1897	116.7	99.5	96.0
1898	116.7	99.5	114.1
1899	133.3	98.9	105.0
1900	133.3	98.9	101.2
1901	133.3	98.9	104.2
1902	133.3	98.9	105.5
1903	133.3	97.6	114.3
1904	216.6	100.6	103.3
1905	254.8	101.0	102.0
1906	240.3	100.9	104.8
1907	240.3	100.9	104.5

PRESSERS, Male.

[Data from 5 establishments 1890–1904; 7, 1905; 13, 1906; 12, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	97.0	99.5	101.7
1891	110.4	99.6	105.6
1892	94.8	99.9	103.0
1893	100.7	99.8	110.7
1894	92.6	100.1	94.9
1895	88.1	100.1	87.9
1896	91.1	100.2	92.7
1897	108.9	99.9	99.9
1898	111.1	100.1	101.2
1899	108.1	100.6	102.4
1900	103.7	100.5	94.4
1901	104.4	100.3	102.1
1902	92.6	100.9	99.5
1903	105.2	100.2	103.6
1904	97.0	99.8	116.4
1905	91.1	100.0	114.3
1906	95.2	99.3	115.1
1907	99.3	99.2	117.0

SAGGER MAKERS, Male.

[Data from 4 establishments 1890–1904; 6, 1905; 12, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	116.7	100.7	99.7
1891	116.7	100.7	99.6
1892	116.7	100.7	99.4
1893	100.0	100.0	98.0
1894	100.0	100.0	99.1
1895	100.0	100.0	97.4
1896	100.0	100.0	97.6
1897	100.0	100.0	96.6
1898	66.7	99.7	107.6
1899	83.3	98.3	105.0
1900	100.0	99.3	105.2
1901	100.0	99.3	103.5
1902	100.0	99.3	106.5
1903	100.0	98.0	107.6
1904	100.0	98.0	108.4
1905	100.0	97.3	117.7
1906	103.9	97.5	121.1
1907	100.7	97.6	121.0

SETTERS-OUT, Male.

[Data from 4 establishments 1890–1904; 6, 1905; 12, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	100.0	100.7
1891	100.0	100.0	100.7
1892	100.0	100.0	100.3
1893	100.0	100.0	100.9
1894	100.0	100.0	99.5
1895	100.0	100.0	99.5
1896	100.0	100.0	99.1
1897	100.0	100.0	99.5
1898	100.0	100.0	99.4
1899	100.0	100.0	100.1
1900	100.0	100.0	100.4
1901	100.0	100.0	100.2
1902	100.0	100.0	101.3
1903	100.0	98.8	100.7
1904	100.0	98.8	101.5
1905	100.0	98.8	101.2
1906	103.2	99.1	105.7
1907	103.2	99.1	110.3

PRINTING AND BINDING, BOOK AND JOB.

BOOKBINDERS, Male.

[Data for employees from 32 establishments 1890–1903. Data for hours and wages from 32 establishments 1890–1894; 33, 1895–1903. Data from 55 establishments 1904; 110, 1905; 112, 1906; 132, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	87.6	101.1	96.1
1891	89.1	101.0	96.2
1892	92.2	100.8	98.1
1893	95.3	100.3	100.0
1894	93.0	100.2	99.3
1895	91.5	100.6	99.5
1896	99.6	100.4	100.2
1897	112.0	99.5	102.5
1898	117.8	98.8	103.6
1899	121.7	97.2	104.8
1900	129.1	96.2	104.9
1901	131.8	95.6	108.9
1902	134.1	94.8	111.1
1903	136.8	94.5	111.9
1904	141.9	94.2	115.0
1905	150.0	93.9	115.9
1906	155.2	93.4	119.2
1907	161.6	92.8	122.2

COMPOSITORS, Male.

[Data from 85 establishments 1890–1903; 96, 1904; 152, 1905; 155, 1906; 166, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	92.9	101.0	97.7
1891	93.1	101.0	98.8
1892	94.4	100.9	98.9
1893	95.3	100.4	99.6
1894	97.5	100.3	100.3
1895	99.6	100.2	99.9
1896	99.4	100.0	99.4
1897	105.9	99.9	100.3
1898	107.9	99.5	101.0
1899	113.6	96.9	104.3
1900	122.2	94.6	107.3
1901	120.8	93.7	109.6
1902	116.7	92.4	113.7
1903	120.0	92.4	115.7
1904	118.3	91.5	119.6
1905	122.8	91.1	122.3
1906	126.1	88.0	128.0
1907	125.0	87.6	131.0

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

PRINTING AND BINDING, BOOK AND JOB—Continued.

COMPOSITORS, Female.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 5 establishments 1890, 1891, 1893–1896, 1898, 1899; 6, 1892, 1897; 4, 1900; 3, 1901–1903. Data from 6 establishments 1904; 18, 1905; 21, 1906; 25, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	103.3	95.0
1891	100.0	103.6	94.9
1892	96.0	100.4	98.9
1893	104.0	99.8	101.2
1894	100.0	98.7	100.2
1895	96.0	98.5	105.0
1896	108.0	98.8	101.4
1897	116.0	98.7	102.7
1898	100.0	99.4	99.2
1899	96.0	98.8	101.5
1900	100.0	99.2	107.8
1901	112.0	96.2	109.2
1902	112.0	96.2	109.2
1903	124.0	96.2	116.0
1904	127.9	92.0	122.1
1905	139.5	91.8	134.6
1906	136.9	91.1	152.2
1907	127.1	90.2	160.0

ELECTROTYPERS, Male.

[Data from 4 establishments 1890–1903; 15, 1904; 22, 1905; 21, 1906; 28, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	97.4	100.3	100.7
1891	97.4	100.3	100.7
1892	94.7	100.4	100.6
1893	92.1	100.1	101.4
1894	97.4	100.3	100.2
1895	100.0	100.5	98.8
1896	100.0	100.5	99.1
1897	110.5	100.7	99.0
1898	107.9	99.7	99.8
1899	105.3	97.1	99.7
1900	97.4	97.2	100.1
1901	100.0	96.4	106.4
1902	105.3	96.4	105.1
1903	102.6	96.4	105.2
1904	105.8	95.5	108.2
1905	104.4	93.8	109.4
1906	122.9	92.7	113.5
1907	123.5	91.4	116.1

PRESS FEEDERS, Female.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 5 establishments 1890–1897, 1900, 1901; 6, 1898, 1899, 1902, 1903. Data from 19 establishments 1904; 38, 1905; 42, 1906; 56, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	94.1	100.6	99.3
1891	94.1	100.6	99.3
1892	88.2	100.6	100.0
1893	97.1	100.6	98.5
1894	91.2	100.6	98.3
1895	91.2	100.5	97.5
1896	91.2	100.6	99.9
1897	102.9	100.6	99.6
1898	102.9	98.6	102.5
1899	147.1	96.6	105.3
1900	129.4	92.2	108.9
1901	132.4	92.2	111.5
1902	126.5	92.1	114.4
1903	117.6	91.8	116.9
1904	140.1	91.8	127.7
1905	137.5	92.3	128.8
1906	150.0	92.2	133.4
1907	152.0	91.9	133.7

PRESS FEEDERS, Male.

[Data from 23 establishments 1890–1903; 65, 1904; 132, 1905; 139, 1906; 153, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	84.1	100.8	97.9
1891	85.0	100.3	100.0
1892	89.0	100.3	99.0
1893	93.1	100.1	98.5
1894	92.3	99.9	100.1
1895	102.0	100.3	101.1
1896	104.5	100.4	99.2
1897	109.8	100.4	99.2
1898	117.9	98.9	101.6
1899	122.4	98.6	103.5
1900	130.5	95.3	119.8
1901	124.8	95.5	120.1
1902	136.6	94.2	121.5
1903	134.1	94.0	124.8
1904	136.6	93.6	126.7
1905	140.0	93.3	129.7
1906	147.0	92.5	135.0
1907	154.6	92.0	142.2

PRESSMEN, Male.

[Data from 64 establishments 1890–1903; 87, 1904; 153, 1905; 158, 1906; 168, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	90.6	100.7	97.8
1891	93.0	100.5	99.0
1892	94.0	100.5	99.4
1893	95.8	100.5	98.9
1894	95.3	100.2	99.3
1895	96.9	100.2	99.6
1896	101.6	100.3	99.5
1897	105.0	100.3	100.8
1898	112.5	99.6	101.0
1899	115.7	97.3	104.7
1900	117.8	95.5	107.3
1901	120.1	93.9	111.1
1902	118.8	92.8	112.5
1903	120.6	92.8	114.7
1904	126.5	92.4	117.0
1905	128.5	92.0	118.9
1906	134.2	91.4	122.1
1907	139.2	90.8	127.2

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

PRINTING AND BINDING, BOOK AND JOB—Concluded.

PROOF READERS, Male.

[Data for employees from 11 establishments 1890–1903. Data for hours and wages from 13 establishments 1890, 1891; 12, 1892–1894, 1902, 1903; 11, 1895–1901. Data from 33 establishments 1904; 56, 1905; 51, 1906; 64, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	103.6	100.6	100.6
1891	103.6	100.6	101.1
1892	103.6	100.6	98.9
1893	103.6	100.6	100.0
1894	96.4	100.6	99.4
1895	92.9	100.7	100.8
1896	100.0	100.7	99.9
1897	100.0	100.7	100.1
1898	100.0	100.1	101.0
1899	107.1	94.8	98.1
1900	114.3	92.3	107.3
1901	121.4	92.4	109.4
1902	125.0	88.5	119.2
1903	132.1	88.3	121.3
1904	152.8	87.9	119.5
1905	162.0	87.9	121.3
1906	163.2	84.4	130.9
1907	171.9	83.4	134.6

PROOF READERS, Female.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 6 establishments 1890, 1891; 7, 1892–1894, 1902, 1903; 8, 1895–1901. Data from 15 establishments 1904; 36, 1905; 27, 1906; 48, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	110.0	101.4	100.8
1891	140.0	102.2	107.6
1892	100.0	99.7	106.3
1893	110.0	100.5	101.1
1894	100.0	99.7	99.6
1895	110.0	100.3	92.9
1896	80.0	99.2	98.3
1897	120.0	100.9	88.8
1898	80.0	99.1	97.5
1899	90.0	97.1	106.1
1900	100.0	94.4	116.2
1901	100.0	93.1	107.9
1902	110.0	93.1	115.7
1903	110.0	93.1	115.7
1904	118.2	92.5	118.2
1905	120.1	92.0	118.9
1906	144.1	90.7	121.6
1907	149.7	89.9	132.2

SEWERS AND STITCHERS, BOOK, Female.

[Data from 16 establishments 1890–1903; 42, 1904; 92, 1905; 106, 1906; 137, 1907.]

Average 1890–99	100.0	100.0	100.0	1899	113.9	98.5	104.9
1890	103.8	100.6	94.2	1900	131.9	95.1	113.4
1891	93.3	100.4	98.8	1901	150.6	94.6	113.9
1892	105.3	100.6	95.3	1902	147.2	93.8	118.0
1893	88.3	100.4	101.7	1903	156.9	93.4	118.2
1894	88.6	100.3	99.8	1904	158.4	93.0	119.1
1895	92.1	100.2	99.6	1905	168.1	92.7	119.5
1896	96.8	100.1	102.9	1906	185.4	91.9	122.7
1897	101.2	100.2	99.2	1907	203.7	91.5	127.1
1898	113.6	99.0	103.8				

PRINTING, NEWSPAPER.

COMPOSITORS, Male.

[Data for employees from 91 establishments 1890–1903. Data for hours and wages from 91 establishments 1890; 92, 1891, 1892; 93, 1893; 94, 1894; 95, 1895–1903. Data from 135 establishments 1904; 148, 1905; 149, 1906; 151, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	131.4	101.2	101.0
1891	133.3	100.2	101.5
1892	130.1	100.1	101.9
1893	115.6	101.1	99.8
1894	91.9	100.4	98.4
1895	79.7	100.4	97.2
1896	76.9	100.1	98.9
1897	80.8	99.9	99.6
1898	78.2	99.1	99.9
1899	82.2	97.6	103.7
1900	84.4	97.3	103.4
1901	83.5	95.9	107.9
1902	83.1	95.1	110.5
1903	87.9	94.8	113.4
1904	92.4	93.9	115.6
1905	100.7	93.4	118.3
1906	108.7	92.8	120.3
1907	114.8	92.3	124.1

LINOTYPE OPERATORS, Male.

[Data for hours and wages from 1 establishment 1890; 5, 1891; 16, 1892; 32, 1893; 54, 1894; 69, 1895; 80, 1896; 88, 1897; 94, 1898; 99, 1899; 100, 1900; 102, 1901; 103, 1902; 104, 1903; 135, 1904; 147, 1905, 1906; 150, 1907.]

Average 1890–99	(a)	100.0	100.0
1890	(a)	100.1	110.8
1891	(a)	98.6	106.2
1892	(a)	101.4	91.9
1893	(a)	102.5	97.5
1894	(a)	100.6	99.9
1895	(a)	99.4	99.4
1896	(a)	99.2	99.1
1897	(a)	99.3	98.7
1898	(a)	99.5	98.2
1899	(a)	99.5	98.2
1900	(a)	99.4	99.6
1901	(a)	99.9	99.6
1902	(a)	99.4	101.0
1903	(a)	99.6	104.0
1904	(a)	99.4	105.9
1905	(a)	99.2	106.5
1906	(a)	98.8	108.5
1907	(a)	98.7	111.3

a No relative numbers shown, as reports were secured from but one establishment employing linotype operators as early as 1890.

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

PRINTING, NEWSPAPER—Concluded.

PRESSMEN, Male.

[Data for employees from 106 establishments 1890–1903. Data for hours and wages from 106 establishments 1890; 107, 1891–1894; 108, 1895–1903. Data from 135 establishments 1904; 143, 1905; 147, 1906; 151, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	86.6	101.1	97.9
1891	88.5	101.0	97.7
1892	92.5	100.9	97.6
1893	94.7	101.0	98.3
1894	95.5	100.5	98.9
1895	95.3	100.1	99.5
1896	105.9	99.6	101.5
1897	107.3	98.8	101.8
1898	114.5	98.7	102.9
1899	119.0	98.2	104.2
1900	123.2	97.8	104.9
1901	127.9	97.5	106.1
1902	133.8	97.3	109.1
1903	138.5	97.1	112.6
1904	148.4	96.3	114.5
1905	152.7	97.0	116.4
1906	165.4	95.3	119.6
1907	175.8	94.1	125.7

STEREOTYPERS, Male.

[Data for employees from 76 establishments 1890–1903. Data for hours and wages from 76 establishments 1890; 77, 1891–1893; 78, 1894, 1895; 79, 1896–1903. Data from 109 establishments 1904; 133, 1905; 137, 1906; 143, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	84.4	100.3	95.3
1891	84.7	100.6	95.3
1892	90.7	100.7	98.1
1893	97.0	100.5	99.3
1894	97.3	100.5	98.6
1895	99.7	100.5	99.0
1896	109.6	100.0	101.8
1897	109.6	99.4	102.3
1898	111.6	99.0	104.6
1899	115.0	98.6	105.5
1900	115.0	98.7	104.9
1901	119.3	98.4	106.5
1902	122.6	98.5	107.3
1903	122.9	98.5	108.4
1904	129.0	97.2	111.5
1905	133.4	96.5	114.3
1906	141.1	96.1	116.2
1907	143.4	95.5	119.9

SHIPBUILDING.

BLACKSMITHS, Male.

[Data for emp oyees from 11 establishments 1890–1903. Data for hours and wages from 11 establishments 1890; 12, 1891–1895; 13, 1896–1898; 14, 1899–1903. Data from 17 establishments 1904; 27, 1905; 28, 1906; 30, 1907.]

Year.			
Average 1890–99	100.0	100.0	100.0
1890	65.5	100.5	97.0
1891	74.8	100.5	100.2
1892	84.0	100.5	99.7
1893	81.5	99.9	99.3
1894	99.2	100.0	96.8
1895	137.8	100.2	97.8
1896	96.6	99.4	104.7
1897	100.8	99.5	104.0
1898	140.3	99.9	99.4
1899	121.8	99.6	101.0
1900	116.8	99.7	101.1
1901	122.7	99.6	100.6
1902	142.0	99.2	103.8
1903	131.1	98.9	105.6
1904	110.1	96.5	109.4
1905	99.7	96.2	109.4
1906	90.7	96.2	113.4
1907	104.6	96.7	112.5

BOILER MAKERS, Male.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 6 establishments 1890, 1894, 1895; 7, 1891–1893, 1896–1898; 8, 1899–1903. Data from 12 establishments 1904; 20, 1905; 23, 1906; 24, 1907.]

Year.			
Average 1890–99	100.0	100.0	100.0
1890	55.3	99.9	98.2
1891	44.7	100.1	98.6
1892	62.4	100.2	100.6
1893	90.1	100.3	99.2
1894	95.7	100.2	95.3
1895	107.1	100.0	100.0
1896	90.1	99.7	104.4
1897	87.9	99.7	101.8
1898	209.9	100.1	100.5
1899	153.9	99.9	101.5
1900	207.1	100.0	99.6
1901	175.9	99.8	101.5
1902	185.8	99.7	102.6
1903	172.3	99.3	101.8
1904	175.3	98.2	103.0
1905	172.7	98.3	103.9
1906	199.2	99.0	106.2
1907	210.5	99.2	108.9

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SHIPBUILDING—Continued.

CALKERS, IRON, Male.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 4 establishments 1890, 1895; 5, 1891–1894, 1896–1898; 6, 1899–1902; 7, 1903. Data from 7 establishments 1904; 15, 1905; 16, 1906; 18, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1890.....	85.3	100.5	92.3
1891.....	179.4	101.3	84.7
1892.....	76.5	100.3	93.7
1893.....	55.9	99.3	103.0
1894.....	52.9	98.7	100.3
1895.....	50.0	98.8	103.5
1896.....	117.6	100.6	107.0
1897.....	100.0	99.6	103.1
1898.....	126.5	100.6	109.6
1899.....	152.9	100.3	102.9
1900.....	120.6	99.9	108.1
1901.....	182.4	96.1	109.4
1902.....	200.0	94.3	124.2
1903.....	155.9	97.7	147.8
1904.....	164.0	93.4	148.1
1905.....	141.4	95.3	145.2
1906.....	140.3	94.7	149.0
1907.....	118.4	94.4	156.4

CALKERS, WOOD, Male.

[Data from 9 establishments 1890–1903; 15, 1904; 23, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1890.....	92.3	100.4	99.4
1891.....	92.3	100.6	99.2
1892.....	89.5	100.2	98.8
1893.....	111.2	100.0	99.3
1894.....	83.2	99.9	98.4
1895.....	92.3	99.6	98.3
1896.....	91.6	100.0	98.5
1897.....	101.4	99.7	100.3
1898.....	125.2	99.7	103.8
1899.....	121.7	99.9	104.0
1900.....	123.1	99.7	105.6
1901.....	155.2	99.8	110.1
1902.....	155.9	99.6	108.4
1903.....	165.0	93.7	109.6
1904.....	146.7	92.9	115.5
1905.....	135.4	92.4	115.7
1906.....	142.3	92.0	117.8
1907.....	129.5	90.1	122.8

CARPENTERS, Male.

[Data for employees from 18 establishments 1890–1903. Data for hours and wages from 19 establishments 1890–1892, 1894, 1895; 20, 1893, 1896–1898; 21, 1899–1903. Data from 24 establishments 1904; 36, 1905; 37, 1906, 1907.]

Average 1890–99 ..	100.0	100.0	100.0
1890.....	83.4	101.1	98.6
1891.....	93.9	100.4	99.8
1892.....	85.4	99.9	98.9
1893.....	84.2	99.8	99.8
1894.....	82.7	99.7	100.6
1895.....	99.7	99.8	100.3
1896.....	97.6	100.1	99.0
1897.....	106.2	99.8	100.5
1898.....	119.1	99.5	100.5
1899.....	147.3	100.0	102.1
1900.....	144.2	99.8	104.4
1901.....	145.3	98.5	105.9
1902.....	140.0	97.8	109.4
1903.....	153.4	96.9	110.1
1904.....	151.2	96.2	110.6
1905.....	161.3	96.8	112.3
1906.....	162.7	95.8	114.8
1907.....	171.4	94.4	120.3

DRILLERS, Male.

[Data for employees from 2 establishments 1890–1903. Data for hours and wages from 2 establishments 1890, 1895; 3, 1891, 1892, 1894, 1896–1898; 4, 1893, 1899–1903. Data from 9 establishments 1904; 18, 1905; 19, 1906; 20, 1907.]

Average 1890–99..	100.0	100.0	100.0
1890.....	113.3	100.9	96.6
1891.....	66.7	99.3	92.3
1892.....	100.0	99.0	94.8
1893.....	86.7	99.0	95.0
1894.....	53.3	98.0	85.6
1895.....	66.7	100.9	93.2
1896.....	80.0	100.9	105.7
1897.....	153.3	100.9	107.1
1898.....	93.3	100.9	114.7
1899.....	180.0	99.9	114.7
1900.....	133.3	98.6	110.6
1901.....	140.0	95.1	110.8
1902.....	146.7	94.5	125.6
1903.....	173.3	91.9	122.1
1904.....	146.9	91.7	125.3
1905.....	243.0	91.7	125.8
1906.....	203.4	91.7	132.2
1907.....	176.8	91.5	138.3

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SHIPBUILDING—Continued.

FITTERS, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890; 7, 1891–1895; 8, 1896, 1897; 9, 1898; 10, 1899–1903. Data from 11 establishments 1904; 20, 1905; 21, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	60.5	99.0	96.7
1891	95.3	100.2	92.8
1892	90.7	100.1	98.3
1893	89.1	99.8	99.3
1894	141.9	100.2	92.4
1895	107.0	100.7	99.4
1896	103.9	100.6	102.1
1897	87.6	99.9	105.5
1898	86.8	99.9	109.4
1899	133.3	99.6	104.2
1900	217.8	100.4	100.4
1901	191.5	98.6	103.5
1902	165.1	99.6	105.7
1903	162.0	99.5	107.0
1904	143.2	98.7	105.7
1905	156.5	99.0	103.7
1906	145.3	98.6	108.8
1907	131.9	98.4	113.7

JOINERS, Male.

[Data for employees from 11 establishments 1890; 1903. Data for hours and wages from 12 establishments 1890–1892, 1894, 1895; 13, 1893, 1896–1898; 14, 1899–1903. Data from 16 establishments 1904; 25, 1905; 26, 1906; 27, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	87.9	101.1	96.3
1891	68.6	99.4	99.5
1892	96.5	99.9	99.2
1893	91.6	99.7	100.9
1894	97.1	100.3	99.1
1895	210.7	101.9	95.9
1896	95.1	99.9	100.8
1897	46.7	97.4	106.8
1898	93.4	100.4	103.3
1899	111.0	100.1	98.3
1900	147.8	101.1	101.2
1901	144.4	100.3	101.4
1902	149.9	100.0	102.7
1903	135.4	98.8	106.2
1904	139.5	97.6	108.2
1905	155.2	98.1	109.6
1906	130.7	98.2	119.2
1907	149.7	98.1	118.0

LABORERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890–1894; 4, 1895–1903. Data from 17 establishments 1904; 33, 1905; 35, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	205.6	101.5	84.7
1891	72.2	98.1	103.8
1892	84.7	99.1	97.3
1893	69.4	98.1	102.0
1894	73.6	98.4	103.8
1895	70.8	99.9	106.1
1896	63.9	101.3	101.5
1897	79.2	101.4	100.4
1898	104.2	100.7	100.4
1899	169.4	101.4	100.1
1900	287.5	101.2	99.8
1901	248.6	101.6	100.5
1902	234.7	98.9	108.3
1903	194.4	98.9	110.6
1904	236.3	98.5	109.8
1905	265.6	98.0	112.6
1906	290.9	97.5	119.2
1907	300.1	98.3	123.2

MACHINISTS, Male.

[Data for employees from 8 establishments 1890–1903. Data for hours and wages from 8 establishments 1890; 9, 1891–1898; 10, 1899–1903. Data from 15 establishments 1904; 24, 1905; 25, 1906; 26, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	66.6	100.1	96.8
1891	67.0	100.1	97.7
1892	97.6	100.3	97.9
1893	90.7	100.3	97.5
1894	89.7	100.2	96.2
1895	104.0	100.0	100.1
1896	104.2	99.8	103.4
1897	104.4	99.6	103.4
1898	109.9	99.5	104.3
1899	165.8	100.0	102.5
1900	135.6	99.9	105.8
1901	193.8	99.6	105.1
1902	230.2	98.8	108.2
1903	200.2	98.3	110.1
1904	229.4	96.4	112.2
1905	220.7	96.4	113.4
1906	251.3	96.9	115.8
1907	235.9	96.7	117.5

MOLDERS, IRON, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890; 4, 1891–1898; 5, 1899–1901; 6, 1902, 1903. Data from 9 establishments 1904; 10, 1905, 1906; 11, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	96.2	100.2	105.4
1891	98.1	101.0	95.2
1892	98.1	100.6	97.0
1893	84.6	100.5	98.8
1894	73.1	99.7	95.9
1895	94.2	99.8	99.6
1896	111.5	99.8	97.2
1897	98.1	99.3	103.3
1898	115.4	99.8	102.3
1899	123.1	99.6	105.0
1900	109.6	99.7	107.5
1901	117.3	99.6	110.2
1902	126.9	98.2	112.5
1903	121.2	98.1	115.6
1904	102.1	96.6	122.0
1905	102.7	98.0	119.1
1906	113.8	95.1	131.0
1907	97.7	95.2	131.3

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SHIPBUILDING—Concluded.

PAINTERS, Male.

[Data for employees from 9 establishments 1890–1903. Data for hours and wages from 9 establishments 1890; 11, 1891–1894, 1899–1903; 10, 1895–1898. Data from 14 establishments 1904; 20, 1905; 23, 1906; 24, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99...	100.0	100.0	100.0
1890.....	78.4	103.1	95.1
1891.....	78.4	102.4	93.8
1892.....	85.1	102.4	95.0
1893.....	112.5	102.8	99.3
1894.....	102.4	102.7	98.3
1895.....	154.8	99.9	105.6
1896.....	97.1	97.6	105.7
1897.....	83.7	94.8	105.6
1898.....	101.0	96.7	102.7
1899.....	108.7	97.6	99.0
1900.....	132.2	98.9	101.5
1901.....	130.8	98.4	101.5
1902.....	134.1	97.0	103.3
1903.....	131.7	97.8	102.6
1904.....	142.5	95.8	108.9
1905.....	153.6	96.1	105.7
1906.....	181.9	95.7	109.7
1907.....	175.0	96.0	112.5

PATTERN MAKERS, Male.

[Data for employees from 8 establishments 1890–1903. Data for hours and wages from 8 establishments 1890; 9, 1891–1898; 10, 1899–1903. Data from 13 establishments 1904; 21, 1905, 1907; 20, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99..	100.0	100.0	100.0
1890.....	60.5	99.9	102.9
1891.....	81.6	100.2	97.8
1892.....	82.9	100.2	97.7
1893.....	84.2	100.2	97.9
1894.....	101.3	100.2	95.3
1895.....	114.5	100.0	100.6
1896.....	127.6	100.1	99.8
1897.....	100.0	99.5	102.7
1898.....	110.5	99.8	100.8
1899.....	135.5	99.7	104.4
1900.....	130.3	99.9	107.0
1901.....	125.0	99.1	109.6
1902.....	142.1	98.4	112.1
1903.....	143.4	97.3	114.3
1904.....	163.7	96.4	117.9
1905.....	156.9	96.8	117.0
1906.....	169.1	97.0	126.5
1907.....	177.4	97.4	127.0

RIGGERS, Male.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890; 8, 1891–1898; 9, 1899–1903. Data from 14 establishments 1904; 20, 1905; 21, 1906; 23, 1907.]

Average 1890–99...	100.0	100.0	100.0
1890.....	79.0	99.7	112.1
1891.....	70.0	98.1	106.0
1892.....	100.0	98.9	101.4
1893.....	119.0	100.3	95.0
1894.....	115.0	100.7	86.9
1895.....	110.0	100.8	92.9
1896.....	71 0	100.4	102.1
1897.....	54.0	99.6	108.3
1898.....	94.0	100.1	104.2
1899.....	184.0	101.4	91.0
1900.....	244.0	102.0	89.2
1901.....	98.0	99.9	99.5
1902.....	242.0	102.0	94.9
1903.....	228.0	101.9	99.3
1904.....	185.5	99.9	102.6
1905.....	226.2	100.7	102.2
1906.....	235.5	99.8	109.2
1907.....	259.6	99.7	107.4

RIVETERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 4 establishments 1890, 1894, 1895; 5, 1891–1893, 1896–1898; 6, 1899–1903. Data from 9 establishments 1904; 17, 1905; 19, 1906, 1907.]

Average 1890–99..	100.0	100.0	100.0
1890.....	58.0	101.1	81.9
1891.....	137.7	100.6	84.3
1892.....	155.1	100.5	92.5
1893.....	15.9	98.4	94.2
1894.....	14.5	98.5	85.2
1895.....	11.6	99.9	128.1
1896.....	23.2	100.1	107.2
1897.....	27.5	99.9	118.1
1898.....	247.8	100.7	103.8
1899.....	301.4	100.2	104.7
1900.....	211.6	100.2	103.7
1901.....	331.9	99.7	94.3
1902.....	281.2	98.9	107.2
1903.....	315.9	99.0	107.1
1904.....	389.6	96.6	106.2
1905.....	349.8	98.3	104.9
1906.....	442.2	96.8	109.0
1907.....	428.7	96.3	120.3

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SILK GOODS.

BEAMERS, Male.

[Data for employees from 2 establishments 1890–1903. Data for hours and wages from 2 establishments 1890–1896; 3, 1897–1903. Data from 3 establishments 1904; 6, 1905; 7, 1906; 8, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	104.0	104.5
1891	100.0	104.0	99.8
1892	75.0	104.0	102.1
1893	75.0	98.2	102.1
1894	75.0	98.2	102.1
1895	100.0	97.5	99.8
1896	75.0	98.2	102.1
1897	100.0	98.5	93.0
1898	75.0	99.9	88.0
1899	225.0	97.4	106.6
1900	75.0	99.9	93.2
1901	150.0	98.2	100.6
1902	100.0	99.1	100.2
1903	125.0	98.6	101.3
1904	107.1	98.3	104.5
1905	140.6	98.5	99.5
1906	140.6	98.5	100.7
1907	133.0	98.4	103.4

DOUBLERS, Female.

[Data from 6 establishments 1890–1904; 10, 1905; 11, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	77.1	102.8	107.0
1891	78.3	102.8	98.6
1892	98.8	102.2	99.6
1893	114.5	98.7	98.4
1894	108.4	98.3	101.8
1895	92.8	98.7	102.5
1896	101.2	98.7	102.0
1897	106.0	99.3	95.5
1898	112.0	99.1	97.9
1899	107.2	99.4	96.2
1900	100.0	99.3	97.0
1901	100.0	98.9	106.9
1902	89.2	99.0	114.3
1903	90.4	98.0	123.4
904	88.0	97.5	130.2
1905	107.7	97.7	126.2
1906	103.7	97.7	132.5
1907	95.1	96.8	146.1

DYERS, Male.

[Data from 4 establishments 1890–1904; 6, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	73.1	103.1	97.2
1891	92.3	103.1	98.1
1892	101.9	103.1	95.1
1893	87.5	103.1	92.6
1894	85.6	98.7	100.9
1895	97.1	98.2	102.0
1896	98.1	97.9	103.1
1897	131.7	96.9	106.6
1898	119.2	97.9	102.3
1899	117.3	97.8	104.0
1900	109.6	98.1	103.8
1901	137.5	97.4	105.2
1902	384.6	94.8	102.2
1903	351.9	94.8	103.1
1904	464.6	94.8	103.4
1905	457.0	94.8	104.1
1906	453.3	94.9	103.7
1907	469.4	94.9	100.9

LOOM FIXERS, Male.

[Data from 5 establishments 1890–1903; 6, 1904; 12, 1905; 16, 1906; 15, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	69.6	104.4	94.7
1891	73.9	104.5	93.8
1892	87.0	101.6	96.4
1893	82.6	98.6	99.0
1894	95.7	98.4	97.7
1895	117.4	98.2	103.7
1896	108.7	98.6	101.0
1897	126.1	98.4	104.2
1898	130.4	98.4	105.1
1899	126.1	98.7	104.3
1900	152.2	98.5	106.2
1901	143.5	98.6	105.3
1902	143.5	98.6	103.0
1903	139.1	98.6	103.3
1904	128.9	98.2	104.0
1905	128.9	98.3	104.4
1906	131.7	98.3	105.6
1907	142.9	98.1	110.1

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SILK GOODS—Continued.

PICKERS, Female.

[Data from 3 establishments 1890–1903; 5, 1904; 11, 1905; 14, 1906; 13, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	48.4	100.0	84.9
1891	61.3	100.0	108.6
1892	71.0	100.0	119.8
1893	67.7	100.0	108.2
1894	83.9	100.0	97.9
1895	103.2	100.0	100.9
1896	106.5	100.0	80.2
1897	135.5	100.0	93.2
1898	145.2	100.0	101.5
1899	167.7	100.0	104.8
1900	154.8	100.0	107.2
1901	177.4	100.0	107.1
1902	190.3	100.0	103.9
1903	161.3	100.0	123.2
1904	137.3	100.5	121.9
1905	142.4	101.7	120.6
1906	146.2	101.7	123.9
1907	163.1	101.0	133.2

QUILLERS, Female.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890–1896; 7, 1897–1903. Data from 8 establishments 1904; 14, 1905; 16, 1906; 15, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	81.3	104.0	103.1
1891	71.4	103.4	99.5
1892	83.5	101.9	94.8
1893	86.8	98.4	104.7
1894	87.9	98.1	96.3
1895	141.8	97.9	97.4
1896	85.7	98.5	109.8
1897	111.0	99.3	99.2
1898	118.7	99.0	99.2
1899	127.5	99.4	95.6
1900	115.4	99.8	95.9
1901	133.0	99.4	96.4
1902	127.5	99.3	97.6
1903	126.4	98.7	107.9
1904	103.7	98.9	107.7
1905	125.1	98.8	107.1
1906	110.7	99.0	111.0
1907	102.2	99.0	119.0

SPINNERS, Male.

[Data from 4 establishments 1890–1904; 6, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	52.9	102.7	103.2
1891	70.6	102.7	93.9
1892	92.9	100.1	99.9
1893	122.4	99.2	98.5
1894	89.4	99.5	95.9
1895	112.9	98.9	99.7
1896	94.1	99.1	103.4
1897	105.9	99.0	104.4
1898	129.4	99.3	99.7
1899	123.5	99.6	101.5
1900	151.8	99.8	97.2
1901	143.5	99.9	105.3
1902	183.5	99.8	103.3
1903	195.3	99.8	105.3
1904	190.1	97.7	109.5
1905	212.6	98.2	113.4
1906	206.8	98.2	125.0
1907	183.2	96.0	127.2

TWISTERS-IN, Male.

[Data from 2 establishments 1890–1903; 4, 1904; 8, 1905; 14, 1906; 13, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	66.7	106.2	98.2
1891	50.0	106.2	100.2
1892	83.3	106.2	100.5
1893	91.7	97.3	97.7
1894	79.2	97.3	104.2
1895	50.0	97.3	104.8
1896	225.0	97.3	98.9
1897	158.3	97.3	102.3
1898	83.3	97.3	95.2
1899	100.0	97.3	98.0
1900	83.3	97.3	102.6
1901	145.8	97.3	87.4
1902	145.8	97.3	100.2
1903	87.5	97.3	103.4
1904	76.3	97.3	100.3
1905	83.4	97.2	101.9
1906	73.3	97.2	103.2
1907	78.0	97.2	110.7

WARPERS, Male.

[Data from 3 establishments 1890–1904; 5, 1905; 7, 1906; 6, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	86.1	105.3	93.1
1891	91.7	105.4	90.6
1892	97.2	102.9	97.9
1893	75.0	98.1	100.4
1894	116.7	98.1	93.8
1895	133.3	98.1	110.1
1895	88.9	98.1	96.8
1897	122.2	98.1	110.5
1898	111.1	98.1	105.0
1899	77.8	98.1	101.7
1900	83.3	98.1	111.6
1901	102.8	98.1	116.3
1902	122.2	98.1	122.8
1903	113.9	98.1	112.4
1904	75.0	98.1	124.3
1905	61.4	96.5	135.0
1906	65.5	96.6	132.9
1907	54.3	96.8	138.5

WARPERS, Female.

[Data for employees from 5 establishments 1890–1903. Data for hours and wages from 5 establishments 1890–1896; 6, 1897–1903. Data from 6 establishments 1904; 12, 1905, 1906; 13, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	90.2	103.1	96.1
1891	100.9	103.1	88.6
1892	101.8	103.1	97.6
1893	83.0	98.4	103.8
1894	86.6	97.8	104.3
1895	100.0	98.6	105.6
1896	101.8	98.4	111.0
1897	113.4	98.6	105.7
1898	118.8	99.3	90.8
1899	102.7	99.3	96.5
1900	105.4	100.1	90.0
1901	105.4	100.2	88.3
1902	114.3	99.9	94.4
1903	117.0	100.0	90.9
1904	113.2	99.4	97.4
1905	124.9	99.4	96.0
1906	125.1	99.5	100.5
1907	126.3	98.8	106.9

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SILK GOODS—Concluded.

WEAVERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890; 4, 1891–1896; 5, 1897–1903. Data from 6 establishments 1904; 9, 1905; 12, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	139.6	102.9	95.6
1891	81.1	103.7	98.0
1892	97.6	101.1	102.6
1893	84.9	98.2	105.8
1894	92.9	98.2	101.2
1895	102.8	98.3	97.3
1896	77.4	98.1	111.2
1897	100.9	99.3	97.9
1898	110.4	100.1	95.5
1899	110.8	100.2	94.6
1900	87.3	100.2	98.9
1901	83.5	100.6	90.8
1902	76.4	100.9	97.4
1903	61.3	100.3	94.3
1904	46.8	100.1	101.4
1905	51.5	100.2	104.1
1906	42.7	99.9	109.9
1907	42.6	99.9	114.7

WEAVERS, Female.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890–1896; 7, 1897–1903. Data from 7 establishments 1904; 12, 1905; 14, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	76.9	100.8	95.6
1891	60.6	102.0	89.9
1892	79.4	100.6	100.6
1893	79.2	98.7	105.2
1894	92.1	99.0	111.0
1895	102.7	98.7	101.3
1896	96.2	100.2	113.0
1897	118.1	100.1	98.1
1898	153.8	99.9	94.5
1899	141.2	100.0	92.8
1900	139.8	100.1	96.1
1901	170.1	99.2	94.0
1902	187.1	99.4	100.5
1903	190.3	99.7	99.0
1904	178.3	99.4	92.8
1905	192.8	99.4	94.4
1906	189.9	99.6	97.6
1907	185.5	99.1	107.5

WEAVERS, RIBBON, Male.

[Data from 2 establishments 1890–1904; 4, 1905–1907.]

Average 1890–99	100.0	100.0	100.0
1890	104.2	105.0	116.5
1891	80.5	104.0	98.4
1892	95.8	105.3	98.7
1893	89.8	98.0	107.1
1894	129.7	98.0	90.2
1895	122.0	98.0	100.1
1896	78.8	98.0	102.1
1897	100.0	98.0	88.7
1898	129.7	98.0	99.1
1899	67.8	98.0	99.0
1900	98.3	98.0	93.0
1901	56.8	98.0	83.4
1902	49.2	98.0	82.8
1903	82.2	98.0	86.8
1904	92.4	94.4	86.9
1905	114.9	94.8	86.3
1906	113.5	94.6	89.1
1907	129.9	94.6	98.6

WEAVERS, RIBBON, Female.

[Data for employees from 1 establishment 1890–1903. Data for hours and wages from 1 establishment 1890–1899; 2, 1900–1903. Data from 2 establishments 1904; 4, 1905, 1906; 3, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	135.6	100.0	99.3
1891	101.7	100.0	102.0
1892	101.7	100.0	100.2
1893	76.3	100.0	101.4
1894	76.3	100.0	100.2
1895	93.2	100.0	95.6
1896	118.6	100.0	99.7
1897	84.7	100.0	97.7
1898	93.2	100.0	104.0
1899	110.2	100.0	100.0
1900	118.6	100.0	95.2
1901	67.8	100.0	95.4
1902	161.0	100.0	84.6
1903	122.0	100.0	89.7
1904	112.9	92.2	83.3
1905	154.3	92.6	89.2
1906	141.7	92.2	90.4
1907	178.4	91.7	98.3

WINDERS, Female.

[Data from 9 establishments 1890–1904, 14, 1905; 17, 1906; 16, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	95.3	103.0	95.9
1891	82.8	103.1	84.3
1892	96.9	102.2	92.8
1893	102.7	98.4	98.4
1894	93.0	98.7	106.8
1895	105.0	98.7	106.2
1896	95.7	99.0	103.2
1897	103.1	99.0	101.4
1898	114.5	98.8	107.4
1899	108.6	99.1	103.3
1900	107.8	99.3	105.3
1901	109.4	99.1	109.1
1902	110.5	99.2	111.2
1903	113.3	99.3	115.3
1904	110.2	98.9	115.2
1905	117.6	99.1	116.7
1906	122.2	99.3	115.2
1907	110.9	99.0	125.5

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SLAUGHTERING AND MEAT PACKING.

BACK SKINNERS, CATTLE, Male.

[Data from 4 establishments 1890–1903; 8, 1904; 12 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	80.0	98.0	102.9
1891	80.0	98.0	102.9
1892	80.0	98.0	104.7
1893	100.0	101.5	104.3
1894	100.0	101.5	96.1
1895	106.7	100.6	96.1
1896	106.7	100.6	96.1
1897	106.7	100.6	96.1
1898	106.7	100.6	97.8
1899	106.7	100.6	102.9
1900	106.7	100.6	109.8
1901	106.7	100.6	109.8
1902	120.0	97.2	114.8
1903	120.0	97.2	125.4
1904	129.6	97.2	129.0
1905	102.1	96.4	130.1
1906	102.1	(a)	132.6
1907	94.2	(a)	132.4

DRY SALTERS, Male.

[Data from 6 establishments 1890–1903; 13, 1904; 14, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	66.3	100.0	105.4
1891	66.3	100.0	104.5
1892	68.6	100.0	105.1
1893	73.8	100.0	104.2
1894	90.7	100.0	97.2
1895	108.1	100.0	95.2
1896	119.8	100.0	95.1
1897	140.1	100.0	93.9
1898	147.1	100.0	97.7
1899	116.9	100.0	101.9
1900	129.1	100.0	99.1
1901	125.6	100.0	100.5
1902	129.7	100.0	106.1
1903	144.8	100.0	111.5
1904	131.7	99.5	112.8
1905	160.3	99.5	108.4
1906	164.1	99.4	110.0
1907	165.5	99.4	112.8

GUTTERS, CATTLE, Male.

[Data from 5 establishments 1890–1903; 9, 1904; 12, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	81.3	98.4	102.8
1891	81.3	98.4	102.8
1892	81.3	98.4	105.4
1893	100.0	101.4	105.1
1894	100.0	101.4	93.6
1895	106.3	100.4	97.6
1896	106.3	100.4	97.6
1897	106.3	100.4	97.6
1898	106.3	100.4	98.9
1899	106.3	100.4	98.9
1900	106.3	100.4	104.3
1901	106.3	100.4	107.0
1902	125.0	98.0	112.3
1903	118.8	97.2	119.9
1904	114.4	97.2	122.2
1905	99.2	97.6	123.4
1906	99.2	(a)	124.3
1907	91.6	(a)	124.2

GUTTERS, HOG, Male.

[Data from 5 establishments 1890–1903; 12, 1904; 14 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	100.0	99.9	100.1
1891	100.0	99.9	100.1
1892	100.0	99.9	100.1
1893	100.0	99.9	100.1
1894	100.0	99.9	100.1
1895	100.0	99.9	100.1
1896	100.0	99.9	100.1
1897	100.0	99.9	100.1
1898	107.7	100.4	98.6
1899	107.7	100.4	100.3
1900	107.7	100.4	99.4
1901	115.4	100.8	98.1
1902	115.4	100.2	98.1
1903	115.4	100.2	99.3
1904	140.1	100.4	84.3
1905	136.2	98.8	79.6
1906	136.2	(a)	82.0
1907	140.1	(a)	81.5

HEADERS, CATTLE, Male.

[Data from 5 establishments 1890–1903; 9, 1904; 11, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	105.9	101.4	97.8
1891	105.9	101.4	97.8
1892	105.9	101.4	97.8
1893	100.0	100.7	102.0
1894	100.0	100.7	97.9
1895	100.0	99.1	101.0
1896	100.0	99.1	98.5
1897	100.0	99.1	101.6
1898	94.1	98.2	105.7
1899	100.0	99.1	99.8
1900	100.0	99.1	107.8
1901	94.1	98.2	107.3
1902	111.8	95.9	113.8
1903	111.8	95.9	123.1
1904	111.8	95.9	126.6
1905	98.2	96.2	130.3
1906	94.8	(a)	128.0
1907	94.8	(a)	130.6

HEADERS, HOG, Male.

[Data from 6 establishments 1890–1903; 13, 1904; 15, 1905–1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	114.3	97.0	97.0
1891	114.3	97.0	97.0
1892	114.3	97.0	97.0
1893	114.3	97.0	107.6
1894	114.3	97.0	107.6
1895	85.7	103.0	99.4
1896	85.7	103.0	99.4
1897	85.7	103.0	99.4
1898	85.7	103.0	99.4
1899	85.7	103.0	96.2
1900	85.7	103.0	99.4
1901	85.7	103.0	99.4
1902	85.7	101.4	97.8
1903	85.7	101.4	106.6
1904	85.7	101.4	107.3
1905	85.7	101.4	106.7
1906	85.7	(a)	111.4
1907	80.3	(a)	114.9

a Hours not reported.

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SLAUGHTERING AND MEAT PACKING—Continued.

LABORERS, Male.

[Data from 4 establishments 1890-1903; 13, 1904; 15, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	85.1	100.0	105.1
1891	87.3	100.0	105.0
1892	90.7	100.0	105.1
1893	88.9	100.0	105.6
1894	99.7	100.0	95.4
1895	101.3	100.0	94.9
1896	101.3	100.0	94.5
1897	108.3	100.0	94.9
1898	111.6	100.0	98.0
1899	125.7	100.0	101.5
1900	130.4	100.0	98.0
1901	137.4	100.0	97.2
1902	144.3	100.0	101.5
1903	143.0	100.0	107.8
1904	131.2	100.0	108.9
1905	132.1	100.0	104.7
1906	134.1	(a)	105.9
1907	137.9	(a)	108.9

PICKLERS, Male.

[Data from 7 establishments 1890-1903; 12, 1904; 14, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	60.8	100.0	104.0
1891	69.0	100.0	103.3
1892	70.7	100.0	103.4
1893	74.6	100.0	103.4
1894	88.7	100.0	96.2
1895	104.8	100.0	95.1
1896	115.5	100.0	95.5
1897	136.1	100.0	96.8
1898	147.0	100.0	99.8
1899	132.4	100.0	102.2
1900	136.6	100.0	100.5
1901	150.7	100.0	100.8
1902	153.8	100.0	107.9
1903	159.4	100.0	114.0
1904	148.9	100.0	114.7
1905	134.2	100.0	109.4
1906	154.1	100.0	110.3
1907	146.9	100.0	112.9

RUMP SKINNERS, CATTLE, Male.

[Data from 2 establishments 1890-1903; 6, 1904; 10, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	66.7	100.0	102.9
1891	66.7	100.0	102.9
1892	66.7	100.0	102.9
1893	100.0	100.0	100.3
1894	100.0	100.0	96.0
1895	100.0	100.0	96.0
1896	100.0	100.0	96.0
1897	100.0	100.0	96.0
1898	100.0	100.0	100.3
1899	116.7	100.0	110.8
1900	116.7	100.0	110.8
1901	116.7	100.0	110.8
1902	116.7	100.0	118.7
1903	100.0	100.0	129.3
1904	111.8	100.0	136.0
1905	97.2	100.1	132.3
1906	97.2	(a)	133.9
1907	92.3	(a)	132.9

SCRAPERS, HOG, Male.

[Data from 5 establishments 1890-1903; 12, 1904; 1907; 13, 1905, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	100.0	100.4	104.4
1891	100.0	100.4	104.4
1892	100.0	100.4	104.4
1893	100.0	100.4	104.4
1894	100.0	100.4	104.9
1895	100.0	100.4	104.9
1896	100.0	100.4	104.9
1897	100.0	100.4	104.9
1898	100.0	100.4	80.9
1899	84.2	96.0	81.9
1900	57.9	100.8	101.8
1901	57.9	100.8	96.6
1902	57.9	99.9	96.6
1903	57.9	99.9	95.8
1904	60.0	100.0	96.6
1905	62.0	98.2	95.4
1906	63.0	(a)	98.3
1907	64.1	(a)	96.9

SIDE SKINNERS, CATTLE, Male.

[Data from 4 establishments 1890-1903; 8, 1904; 12, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	87.8	98.3	104.3
1891	87.8	98.3	104.3
1892	87.8	98.3	106.9
1893	102.4	101.0	106.9
1894	102.4	101.0	95.1
1895	104.9	100.7	95.1
1896	104.9	100.7	95.1
1897	104.9	100.7	95.1
1898	104.9	100.7	96.7
1899	107.3	100.4	100.5
1900	107.3	100.4	106.9
1901	109.8	100.1	106.9
1902	119.5	99.0	111.3
1903	114.6	98.2	116.4
1904	111.0	98.2	118.8
1905	97.7	98.6	119.5
1906	100.7	(a)	120.1
1907	94.8	(a)	120.2

SPLITTERS, CATTLE, Male.

[Data from 4 establishments 1890-1903; 9, 1904; 13, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	91.3	98.7	104.6
1891	91.3	98.7	104.6
1892	91.3	98.7	106.9
1893	100.0	100.4	106.9
1894	100.0	100.4	95.0
1895	108.7	100.6	95.0
1896	108.7	100.6	95.0
1897	108.7	100.6	95.0
1898	108.7	100.6	96.9
1899	108.7	100.6	100.2
1900	108.7	100.6	106.9
1901	108.7	100.6	106.9
1902	121.7	99.2	111.3
1903	126.1	98.8	116.3
1904	123.2	98.8	118.5
1905	108.3	100.0	117.1
1906	111.1	(a)	118.7
1907	101.4	(a)	122.3

(a) Hours not reported.

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

SLAUGHTERING AND MEAT PACKING—Concluded.

SPLITTERS, HOG, Male.

[Data from 6 establishments 1890-1903; 13, 1904; 15, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	100.0	100.1	98.4
1891	100.0	100.1	98.4
1892	100.0	100.1	98.4
1893	100.0	100.1	99.0
1894	100.0	100.1	99.0
1895	100.0	100.1	100.9
1896	100.0	100.1	100.9
1897	100.0	100.1	100.9
1898	114.3	99.4	101.2
1899	114.3	99.4	102.9
1900	114.3	99.4	102.9
1901	121.4	100.2	102.0
1902	121.4	99.6	102.0
1903	121.4	99.6	109.4
1904	121.4	99.6	110.1
1905	121.4	98.7	111.5
1906	128.3	(a)	112.7
1907	124.8	(a)	111.3

STICKERS, CATTLE, Male.

[Data from 5 establishments 1890-1903; 8, 1904; 11, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	100.0	100.0	103.6
1891	100.0	100.0	103.6
1892	100.0	100.0	103.6
1893	100.0	100.0	103.6
1894	100.0	100.0	97.4
1895	100.0	100 0	97.4
1896	100.0	100.0	97.4
1897	100.0	100.0	97.4
1898	100.0	100.0	97.4
1899	100.0	100.0	98.5
1900	100.0	100.0	101.5
1901	100.0	100.0	101 5
1902	100.0	100.0	108.7
1903	111.1	100.9	115.3
1904	103.7	100.9	119.3
1905	97.9	100.6	119.0
1906	103.7	(a)	119 3
1907	97.9	(a)	118.5

STICKERS, HOG, Male.

[Data from 6 establishments 1890-1903; 13, 1904; 15, 1905-1907.]

Average 1890-99	100.0	100.0	100.0	1899	100.0	100.0	104.2
1890	100.0	100.0	99.5	1900	100.0	100.0	104.2
1891	100.0	100.0	99.5	1901	100.0	100.0	104.2
1892	100.0	100.0	99.5	1902	100.0	98.4	105.8
1893	100.0	100.0	97.9	1903	100.0	98.4	113.7
1894	100.0	100.0	97.9	1904	100.0	98.4	113.7
1895	100.0	100.0	99.5	1905	100.0	98.4	115.4
1896	100.0	100.0	99.5	1906	100.0	(a)	119.9
1897	100.0	100.0	101.1	1907	100.0	(a)	119.3
1898	100.0	100.0	101.1				

STREETS AND SEWERS, CONTRACT WORK.

LABORERS, Male.

[Data from 36 establishments 1890-1903; 70, 1904; 120, 1905; 128, 1906; 131, 1907.]

Average 1890-99	100.0	100.0	100.0	1899	89.6	99.0	104.9
1890	102.3	101.2	95.7	1900	99.4	98.8	107.1
1891	121.7	101.4	98.1	1901	100.1	96.5	114.9
1892	112.3	101.3	98.2	1902	100.8	95.2	120.2
1893	109.7	101.0	96.9	1903	103.9	95.1	124.3
1894	107.3	101.0	97.0	1904	104.2	95.1	125.3
1895	91.1	100.6	98.5	1905	101.3	94.7	128.6
1896	98.9	99.7	102.9	1906	102.5	93.3	139.8
1897	85.6	97.4	103.7	1907	97.5	92.7	145.7
1898	81.4	97.5	105.2				

(a) Hours not reported.

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

STREETS AND SEWERS, MUNICIPAL WORK.

LABORERS, Male.

[Data for employees from 47 establishments 1890–1903. Data for hours and wages from 47 establishments 1890–1893; 48, 1894–1903. Data from 58 establishments 1904; 70, 1905, 1906; 72, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0	1899	108.2	95.7	105.8
1890	85.8	101.1	99.8	1900	106.6	93.3	110.3
1891	86.2	100.6	99.5	1901	112.0	92.6	110.6
1892	94.6	100.9	98.3	1902	99.4	92.7	111.0
1893	98.8	101.5	98.1	1903	93.5	91.8	111.8
1894	115.1	100.7	100.9	1904	100.1	91.1	113.8
1895	106.1	100.0	99.7	1905	109.3	90.9	113.0
1896	98.4	100.6	98.1	1906	116.6	91.0	114.9
1897	104.3	100.1	98.7	1907	130.7	90.5	121.6
1898	102.3	98.7	100.9				

TOBACCO, CIGARS.

BUNCH MAKERS, HAND, Male.

[Data for employees from 1 establishment 1890–1903. Data for hours and wages from 2 establishments 1890–1895; 1, 1896–1903. Data from 4 establishments 1904; 11, 1905; 9, 1906; 13, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	74.4	99.5	98.9
1891	81.4	98.3	92.5
1892	65.1	93.3	84.2
1893	81.4	96.3	112.2
1894	102.3	96.5	101.9
1895	86.0	96.8	97.3
1896	88.4	104.8	100.5
1897	120.9	104.8	113.5
1898	127.9	104.8	100.4
1899	160.5	104.8	98.5
1900	27.9	104.8	100.1
1901	90.7	104.8	107.2
1902	102.3	104.8	101.7
1903	134.9	104.8	117.1
1904	134.9	100.6	121.8
1905	176.3	102.0	115.1
1906	149.6	100.4	125.5
1907	144.9	98.4	129.8

BUNCH MAKERS, HAND, Female.

[Data for employees from 6 establishments 1890–1903. Data for hours and wages from 6 establishments 1890–1895; 7, 1896–1903. Data from 12 establishments 1904; 19, 1905; 21, 1906; 20, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	89.6	100.0	97.1
1891	90.4	100.2	100.1
1892	84.3	99.4	98.1
1893	91.2	100.9	96.4
1894	101.2	101.3	99.9
1895	94.8	101.2	98.0
1896	92.8	99.1	100.8
1897	117.3	98.8	107.8
1898	108.8	99.0	101.7
1899	128.9	99.9	97.3
1900	60.6	93.3	91.9
1901	90.4	97.0	104.3
1902	97.2	99.3	101.2
1903	110.0	100.2	125.3
1904	105.3	98.7	135.7
1905	105.9	98.2	137.8
1906	98.3	97.4	152.2
1907	97.9	97.1	157.1

BUNCH MAKERS, MACHINE, Female.

[Data from 3 establishments 1890–1903; 8, 1904; 9 1905; 11, 1906, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	74.8	100.7	101.8
1891	80.0	100.7	102.0
1892	87.4	100.8	103.6
1893	78.5	100.7	101.1
1894	92.6	100.8	95.0
1895	134.8	100.8	95.8
1896	95.6	98.9	96.8
1897	140.0	99.3	95.8
1898	100.0	98.5	104.0
1899	112.6	98.9	104.4
1900	134.8	99.1	108.6
1901	148.9	99.1	105.2
1902	163.0	99.3	113.4
1903	170.4	99.3	113.7
1904	180.4	99.3	116.3
1905	168.4	97.7	116.5
1906	142.7	97.3	138.8
1907	144.5	98.3	130.3

CIGAR MAKERS, Male.

[Data from 9 establishments 1890–1903; 22, 1904; 34, 1905; 36, 1906; 40, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	83.6	97.9	102.8
1891	101.6	96.4	108.2
1892	105.8	99.3	105.9
1893	145.4	100.8	101.2
1894	120.6	99.5	100.5
1895	110.6	98.9	99.0
1896	90.3	102.7	94.0
1897	69.7	98.7	96.8
1898	70.6	101.4	92.4
1899	102.5	104.3	99.2
1900	136.6	105.1	99.7
1901	174.3	106.4	105.1
1902	125.7	104.8	105.9
1903	127.3	105.4	107.9
1904	146.6	106.6	111.2
1905	159.9	107.3	112.2
1906	164.5	106.7	117.7
1907	159.2	106.2	118.7

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

TOBACCO, CIGARS—Continued.

CIGAR ROLLERS, HAND, Male.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 7 establishments 1890–1895; 5, 1896, 1897; 4, 1898–1903. Data from 5 establishments 1904; 9, 1905; 12, 1906; 14, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	93.0	99.1	101.2
1891	95.0	98.9	98.4
1892	88.9	97.3	96.9
1893	94.5	98.8	102.3
1894	96.5	99.7	99.2
1895	99.0	99.3	100.1
1896	95.5	100.7	100.1
1897	111.6	102.0	98.9
1898	111.1	101.8	100.5
1899	117.1	102.3	102.2
1900	71.9	96.4	102.9
1901	86.9	99.0	113.4
1902	91.0	99.4	117.4
1903	91.5	99.8	113.3
1904	94.9	97.9	114.4
1905	90.5	98.1	113.7
1906	61.2	97.1	126.8
1907	59.8	97.2	128.8

CIGAR ROLLERS, HAND, Female.

[Data for employees from 4 establishments 1890–1903. Data for hours and wages from 4 establishments 1890–1895; 6, 1896, 1897; 7, 1898–1903. Data from 16 establishments 1904; 18, 1905; 22, 1906; 24, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	87.8	101.0	99.7
1891	89.6	101.0	99.7
1892	77.1	100.7	101.3
1893	91.4	100.8	97.6
1894	105.4	101.2	99.0
1895	97.3	101.2	105.3
1896	88.1	97.8	97.6
1897	122.9	98.6	98.7
1898	116.1	98.7	98.6
1899	125.3	98.9	102.8
1900	48.8	93.6	89.1
1901	74.4	95.8	105.8
1902	82.4	97.0	111.6
1903	87.2	97.6	116.7
1904	98.7	96.9	110.4
1905	95.9	96.4	119.9
1906	105.5	96.1	130.8
1907	106.5	96.1	126.8

CIGAR ROLLERS, MACHINE, Female.

[Data from 2 establishments 1890–1903; 7, 1904; 10, 1905; 13, 1906; 12, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	54.1	100.4	104.5
1891	54.1	100.4	105.5
1892	78.7	100.4	104.3
1893	64.7	100.4	107.7
1894	93.3	100.4	109.2
1895	138.3	100.4	96.4
1896	128.9	99.6	92.0
1897	124.9	99.2	94.8
1898	141.3	99.4	91.9
1899	122.2	99.2	93.8
1900	151.4	99.5	107.5
1901	165.7	99.5	129.5
1902	204.3	99.7	123.0
1903	204.9	99.7	129.2
1904	177.4	99.0	136.4
1905	178.4	99.0	138.0
1906	160.7	99.0	152.3
1907	160.9	98.0	158.4

PACKERS, Male.

[Data for employees from 11 establishments 1890–1903. Data for hours and wages from 11 establishments 1890–1892; 12, 1893–1898; 11, 1899–1903. Data from 22 establishments 1904; 35, 1905; 33, 1906; 44, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	74.4	100.3	91.8
1891	75.2	100.2	100.9
1892	95.3	100.6	99.3
1893	87.6	100.5	98.4
1894	103.1	100.4	98.7
1895	102.3	100.5	100.1
1896	93.8	99.2	103.1
1897	117.8	99.6	100.9
1898	121.7	99.3	102.2
1899	131.8	99.4	104.7
1900	72.9	99.6	104.6
1901	76.7	98.9	108.0
1902	94.6	99.9	103.1
1903	83.7	100.8	114.2
1904	80.6	100.5	118.1
1905	74.6	100.1	119.9
1906	83.0	99.6	125.9
1907	80.3	99.5	118.7

PACKERS, Female.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 3 establishments 1890–1899; 4, 1900–1903. Data from 13 establishments 1904; 17, 1905; 19, 1906; 22, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	61.5	101.7	109.1
1891	92.3	99.7	107.7
1892	107.7	99.2	109.1
1893	130.8	98.6	96.6
1894	115.4	99.0	89.3
1895	115.4	99.0	88.2
1896	61.5	101.7	102.1
1897	100.0	99.4	96.4
1898	92.3	99.7	102.0
1899	84.6	102.1	99.6
1900	115.4	106.6	80.1
1901	100.0	106.7	116.8
1902	138.5	106.1	103.5
1903	123.1	107.0	86.0
1904	123.8	106.2	93.8
1905	144.6	105.9	94.2
1906	120.9	105.4	98.4
1907	127.4	105.5	104.8

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

TOBACCO, CIGARS—Concluded.

STEMMERS, Male.

[Data for employees from 3 establishments 1890–1903. Data for hours and wages from 4 establishments 1890–1897, 1899; 3, 1898, 1900–1903. Data from 5 establishments 1904; 13, 1905, 1906; 17, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	52.1	99.9	106.6
1891	75.5	100.0	103.0
1892	109.6	100.0	95.5
1893	144.7	100.0	89.4
1894	104.3	100.0	95.8
1895	124.5	100.0	91.9
1896	120.2	100.0	94.2
1897	56.4	99.9	109.4
1898	91.5	100.1	108.9
1899	121.3	100.1	105.8
1900	114.9	100.1	118.7
1901	60.6	100.1	121.8
1902	72.3	100.1	112.3
1903	73.4	100.1	141.8
1904	48.3	97.3	126.2
1905	47.5	95.0	138.9
1906	50.7	96.4	143.2
1907	51.8	96.6	149.1

STEMMERS, Female.

[Data for employees from 13 establishments 1890–1903. Data for hours and wages from 14 establishments 1890, 1894–1896, 1898–1903; 13, 1891–1893, 1897. Data from 33 establishments 1904; 46, 1905; 49, 1906; 52, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890–99	100.0	100.0	100.0
1890	91.0	100.9	90.2
1891	102.5	99.8	88.6
1892	93.4	100.2	97.3
1893	94.8	98.5	94.4
1894	104.3	99.9	100.7
1895	106.1	99.3	97.2
1896	92.1	99.9	103.0
1897	100.2	99.8	112.9
1898	103.6	100.7	109.8
1899	112.0	101.0	105.8
1900	97.3	99.8	105.5
1901	98.2	99.3	120.0
1902	105.0	100.0	117.0
1903	100.9	101.0	120.4
1904	107.8	101.4	125.1
1905	116.1	100.9	124.1
1906	120.5	100.1	130.8
1907	122.9	99.9	133.0

WOOLEN AND WORSTED GOODS.

BURLERS, Female.

[Data from 10 establishments 1890–1903; 13, 1904; 25, 1905; 26, 1906; 29, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	100.0	103.1	93.3
1891	107.0	103.1	93.7
1892	108.0	102.8	97.5
1893	104.3	99.5	100.5
1894	78.6	92.8	99.2
1895	94.1	101.7	99.6
1896	89.3	101.6	107.9
1897	100.5	92.4	100.4
1898	108.0	101.7	102.9
1899	112.3	101.2	105.5
1900	120.9	101.4	111.3
1901	155.6	101.5	108.3
1902	164.2	100.1	113.3
1903	175.4	99.6	119.4
1904	184.9	98.1	118.7
1905	179.1	98.9	124.4
1906	191.7	98.6	129.5
1907	257.7	97.9	136.7

CARDERS, Male.

[Data from 13 establishments 1890–1903; 14, 1904; 24, 1905–1907.]

Average 1890–99	100.0	100.0	100.0
1890	97.4	101.9	99.1
1891	103.1	101.8	99.6
1892	110.8	101.8	101.7
1893	95.4	100.5	103.4
1894	99.0	100.5	98.5
1895	106.2	100.4	97.7
1896	103.1	100.5	98.1
1897	102.1	91.8	101.7
1898	94.4	100.4	99.8
1899	88.2	100.3	100.0
1900	99.0	100.2	110.9
1901	115.9	100.3	106.2
1902	115.4	99.9	106.7
1903	135.9	99.5	109.4
1904	125.5	98.6	115.0
1905	122.0	100.0	116.8
1906	113.8	100.0	121.0
1907	114.9	99.6	128.7

CARD STRIPPERS, Male.

[Data from 3 establishments 1890–1903; 8, 1904; 13, 1905, 1906; 15, 1907.]

Average 1890–99	100.0	100.0	100.0
1890	92.3	100.0	92.4
1891	100.0	100.0	99.3
1892	69.2	100.0	103.3
1893	76.9	100.0	99.5
1894	92.3	100.0	99.0
1895	107.7	100.0	96.5
1896	100.0	100.0	104.0
1897	115.4	100.0	100.2
1898	123.1	100.0	98.9
1899	100.0	100.0	106.7
1900	107.7	100.0	111.4
1901	107.7	100.0	112.2
1902	84.6	100.0	116.6
1903	69.2	100.0	117.6
1904	70.6	98.4	120.5
1905	72.6	98.1	121.8
1906	80.7	97.1	122.6
1907	76.8	96.9	125.5

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TABLE II.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Continued.

WOOLEN AND WORSTED GOODS—Continued.

COMBERS, Male.

[Data from 1 establishment 1890-1903; 2, 1904; 6, 1905, 1906; 7, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	33.3	102.4	95.7
1891	122.2	102.4	98.9
1892	100.0	102.4	95.7
1893	77.8	99.0	99.5
1894	77.8	99.0	107.2
1895	100.0	99.0	94.0
1896	100.0	99.0	104.6
1897	155.6	99.0	95.4
1898	155.6	99.0	95.9
1899	122.2	99.0	113.3
1900	144.4	99.0	106.6
1901	122.2	99.0	107.9
1902	188.9	99.0	103.8
1903	244.4	99.0	102.1
1904	366.6	99.6	93.3
1905	378.8	99.3	94.8
1906	433.8	99.5	95.3
1907	405.7	98.4	96.9

COMBERS, Female.

[Data from 4 establishments 1890-1903; 5, 1904, 1905, 1907; 4, 1906.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	76.4	100.5	98.3
1891	96.4	100.5	98.8
1892	116.4	100.5	98.5
1893	129.1	99.4	101.3
1894	85.5	99.9	93.4
1895	89.1	100.0	96.3
1896	98.2	99.9	103.1
1897	101.8	99.8	102.9
1898	109.1	99.8	104.0
1899	100.0	99.8	103.3
1900	109.1	99.9	110.3
1901	116.4	99.8	111.1
1902	110.9	98.3	112.6
1903	116.4	98.4	110.4
1904	126.5	98.0	105.8
1905	156.9	97.4	101.7
1906	188.5	97.0	105.4
1907	169.7	96.3	106.5

DYERS, Male.

[Data from 13 establishments 1890-1903; 15, 1904; 24, 1905, 1906; 25, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	93.8	99.5	100.2
1891	90.7	99.6	101.5
1892	107.3	99.5	100.7
1893	100.0	98.4	103.1
1894	97.9	101.8	95.5
1895	106.7	101.4	96.5
1896	98.4	100.4	98.5
1897	107.8	97.8	99.4
1898	100.5	100.7	101.4
1899	94.3	100.8	102.6
1900	95.9	100.5	109.3
1901	101.6	100.6	106.8
1902	105.7	99.1	108.4
1903	106.7	99.6	108.2
1904	107.9	98.9	108.9
1905	110.4	99.9	109.3
1906	112.0	99.8	114.8
1907	115.4	98.9	122.3

LOOM FIXERS, Male.

[Data from 15 establishments 1890-1903; 16, 1904; 26, 1905, 1906; 29, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	100.0	100.5	98.3
1891	96.7	100.4	98.2
1892	101.3	100.3	100.2
1893	96.1	99.9	102.0
1894	90.1	97.1	96.4
1895	93.4	100.4	96.7
1896	98.7	100.4	101.2
1897	103.3	100.4	102.0
1898	111.2	100.2	102.0
1899	106.6	100.4	102.8
1900	117.8	100.3	112.5
1901	111.8	100.3	112.2
1902	115.1	99.1	114.0
1903	114.5	99.0	115.9
1904	112.5	98.2	112.7
1905	120.1	98.8	114.5
1906	120.1	98.5	122.7
1907	125.1	97.8	128.9

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY OCCUPATIONS—Concluded.

WOOLEN AND WORSTED GOODS—Concluded.

SPINNERS, FRAME, Female.

[Data from 3 establishments 1890-1903; 4, 1904; 8, 1905, 1906; 9, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	73.7	100.9	96.7
1891	81.8	100.9	97.6
1892	118.7	100.9	98.4
1893	100.0	99.6	103.5
1894	106.7	99.8	94.2
1895	105.7	99.8	95.1
1896	94.3	99.7	101.1
1897	107.2	99.6	102.5
1898	118.7	99.5	104.4
1899	94.7	99.3	106.5
1900	110.5	99.2	118.0
1901	119.1	99.4	115.4
1902	146.9	97.7	122.8
1903	173.7	98.0	123.2
1904	142.6	98.0	120.2
1905	130.9	97.9	121.6
1906	155.0	97.9	125.6
1907	153.3	96.8	139.8

SPINNERS, MULE, Male.

[Data for employees from 9 establishments 1890-1903. Data for hours and wages from 9 establishments 1890-1892; 10, 1893-1896; 11, 1897-1903. Data from 14 establishments 1904; 22, 1905, 1906; 23, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	99.3	102.7	96.6
1891	104.8	102.7	95.5
1892	97.9	102.6	93.9
1893	90.4	99.2	101.5
1894	84.9	90.4	98.1
1895	105.5	101.6	96.2
1896	102.7	101.6	103.7
1897	102.1	94.6	104.2
1898	110.3	101.6	111.1
1899	101.4	102.9	99.0
1900	107.5	101.8	115.6
1901	105.5	101.7	114.3
1902	139.0	100.9	114.0
1903	150.0	100.4	124.8
1904	148.9	98.8	125.9
1905	145.8	98.6	131.1
1906	124.7	98.7	140.6
1907	133.0	98.5	143.3

WEAVERS, Male.

[Data for employees from 9 establishments 1890-1903. Data for hours and wages from 10 establishments 1890-1900; 11, 1901-1903. Data from 17 establishments 1904; 26, 1905; 27, 1906, 1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	92.1	100.6	101.6
1891	98.8	100.6	102.2
1892	103.9	100.6	103.8
1893	93.6	99.5	109.7
1894	80.9	99.7	92.8
1895	96.7	99.7	94.9
1896	103.0	99.8	94.7
1897	113.6	99.7	98.0
1898	115.7	99.8	101.1
1899	101.1	99.8	100.9
1900	138.4	99.6	111.7
1901	142.8	99.6	113.6
1902	139.3	98.7	120.4
1903	171.7	98.4	124.7
1904	162.2	98.1	116.6
1905	163.2	98.5	123.8
1906	144.3	98.3	136.0
1907	168.2	97.9	142.1

WEAVERS, Female.

[Data for employees from 9 establishments 1890-1903. Data for hours and wages from 10 establishments 1890-1895, 1901-1903; 9, 1896-1900. Data from 17 establishments 1904; 27, 1905-1907.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
Average 1890-99	100.0	100.0	100.0
1890	106.4	101.0	100.4
1891	112.7	101.0	99.1
1892	96.1	101.0	100.8
1893	107.2	99.5	106.7
1894	100.5	99.6	94.3
1895	92.9	99.6	93.8
1896	93.5	99.7	96.7
1897	92.5	99.7	100.7
1898	105.2	99.4	104.6
1899	93.4	99.4	102.4
1900	105.0	99.4	109.8
1901	107.0	99.4	112.5
1902	106.4	98.2	112.5
1903	108.2	98.2	115.9
1904	106.5	97.1	113.4
1905	117.2	98.0	117.1
1906	115.7	98.0	126.4
1907	105.1	97.8	137.1

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY INDUSTRIES.

[Average 1890-1899=100.0. For explanation of relative figures, see page 22.]

AGRICULTURAL IMPLEMENTS.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	86.2	100.3	97.1
1891	88.2	100.3	100.8
1892	95.1	100.3	101.6
1893	105.1	100.3	102.5
1894	95.8	99.2	97.3
1895	98.1	100.3	96.4
1896	94.5	99.9	102.0
1897	95.3	99.0	99.4
1898	120.9	100.2	101.0
1899	120.6	100.2	101.8
1900	130.7	100.2	105.8
1901	105.9	100.2	107.6
1902	115.8	100.2	112.8
1903	124.8	99.4	117.2
1904	108.5	97.3	122.5
1905	123.7	97.1	124.4
1906	133.3	96.6	129.3
1907	130.5	96.3	130.9

BAKERY, BREAD.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	93.3	100.8	99.3
1891	94.6	100.8	99.9
1892	96.1	100.9	100.3
1893	96.0	100.5	100.2
1894	97.2	100.4	98.4
1895	100.2	99.9	98.7
1896	102.1	99.6	99.6
1897	102.6	100.2	99.8
1898	107.9	99.1	100.6
1899	109.8	97.8	103.1
1900	114.0	96.9	106.6
1901	121.0	96.3	108.8
1902	130.4	95.8	113.9
1903	133.7	93.9	118.9
1904	142.6	93.6	121.1
1905	148.1	92.5	123.5
1906	155.6	91.8	127.4
1907	159.6	91.6	128.9

BLACKSMITHING AND HORSESHOEING.

1890	101.8	101.1	98.9
1891	100.9	101.1	98.7
1892	102.5	101.0	98.8
1893	101.1	100.2	99.2
1894	98.7	99.7	99.1
1895	96.6	99.6	99.1
1896	98.7	99.5	99.9
1897	97.9	99.4	100.9
1898	101.1	99.3	102.2
1899	101.3	99.0	102.9
1900	102.4	98.4	104.5
1901	105.1	97.7	106.6
1902	101.5	97.0	108.6
1903	101.9	96.4	112.2
1904	100.3	95.5	114.8
1905	101.9	95.2	116.2
1906	105.6	94.6	119.9
1907	105.5	94.1	126.4

BOOTS AND SHOES.

1890	77.2	100.2	97.9
1891	80.0	100.8	96.2
1892	86.4	100.5	98.2
1893	97.1	100.1	100.5
1894	99.0	99.9	99.5
1895	103.2	99.9	100.6
1896	110.5	99.8	100.7
1897	111.3	99.7	102.5
1898	111.3	99.6	101.8
1899	118.4	99.5	102.3
1900	123.2	99.0	105.3
1901	127.7	99.2	105.2
1902	124.0	98.0	108.8
1903	130.4	96.6	115.6
1904	143.8	96.9	117.1
1905	155.4	96.8	118.4
1906	170.2	96.3	120.4
1907	168.4	96.0	124.3

BRICK.

1890	98.6	99.9	101.0
1891	97.6	99.9	101.3
1892	99.7	100.0	102.7
1893	100.2	100.0	101.8
1894	98.7	100.1	99.1
1895	97.9	100.0	98.5
1896	100.4	100.0	97.1
1897	100.9	99.9	97.4
1898	101.5	100.1	100.1
1899	104.1	100.2	101.1
1900	102.7	99.9	103.1
1901	104.6	100.0	105.1
1902	108.5	99.9	110.1
1903	109.9	99.3	112.2
1904	110.1	98.6	112.8
1905	110.5	98.8	113.8
1906	111.2	98.7	119.1
1907	109.2	98.5	122.7

BUILDING TRADES.

1890	96.5	102.5	97.0
1891	100.0	101.8	97.9
1892	106.8	100.7	99.9
1893	101.7	100.5	100.0
1894	90.2	100.7	97.6
1895	92.4	100.3	98.4
1896	99.2	99.2	99.9
1897	99.7	98.6	101.3
1898	104.1	98.1	102.8
1899	109.8	97.5	105.3
1900	113.6	95.5	109.9
1901	119.8	94.4	114.5
1902	126.1	92.6	121.1
1903	123.2	91.8	126.8
1904	122.5	91.3	129.7
1905	128.0	91.2	132.2
1906	140.0	90.9	140.2
1907	137.4	90.6	144.6

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY INDUSTRIES—Continued.

[Average 1890–1899=100.0.]

CANDY.				CARPETS.			
Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.	Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	112.7	99.3	102.3	1890	104.2	101.2	99.6
1891	108.9	99.3	103.3	1891	100.5	101.2	97.9
1892	103.2	100.0	99.8	1892	100.6	100.4	100.0
1893	104.2	100.0	98.2	1893	105.5	99.5	99.8
1894	95.7	99.9	98.8	1894	87.0	99.6	95.3
1895	95.8	100.3	98.9	1895	101.8	99.5	97.2
1896	94.8	100.3	100.0	1896	102.6	99.5	101.9
1897	99.2	100.3	98.1	1897	93.1	99.6	101.8
1898	89.6	100.4	100.5	1898	96.9	99.6	103.0
1899	92.9	100.4	100.7	1899	106.4	99.6	103.7
1900	96.6	100.4	99.0	1900	111.5	99.7	104.1
1901	91.2	100.3	109.5	1901	115.2	99.6	108.1
1902	91.9	100.3	108.5	1902	119.4	99.6	105.4
1903	103.1	100.2	109.3	1903	122.5	99.3	111.3
1904	107.6	100.3	112.2	1904	129.9	98.3	108.1
1905	113.4	100.1	114.3	1905	128.1	98.4	111.7
1906	114.7	100.2	118.9	1906	109.5	98.1	113.9
1907	125.0	100.0	124.4	1907	110.2	98.6	117.1
CARRIAGES AND WAGONS.				**CARS, STEAM RAILROAD.**			
1890	95.5	100.4	100.0	1890	101.0	101.6	102.9
1891	98.6	100.6	99.4	1891	102.2	101.1	102.4
1892	102.9	100.4	100.4	1892	103.9	101.6	101.5
1893	103.4	100.1	99.7	1893	107.3	101.2	104.0
1894	95.7	99.5	99.2	1894	85.8	97.1	97.8
1895	97.2	100.0	98.1	1895	88.6	98.9	97.8
1896	92.8	99.7	100.7	1896	96.6	98.8	97.6
1897	97.8	99.8	100.2	1897	94.5	98.0	98.2
1898	104.6	100.3	100.1	1898	107.3	100.8	98.0
1899	111.0	99.2	102.3	1899	111.9	101.1	99.8
1900	112.7	99.2	102.2	1900	118.7	101.4	100.7
1901	121.4	99.5	101.6	1901	123.8	100.6	101.7
1902	115.2	99.7	103.4	1902	128.9	100.6	105.7
1903	116.2	98.4	107.6	1903	136.5	98.1	111.5
1904	112.9	98.3	108.9	1904	137.6	96.8	116.2
1905	117.9	96.9	111.6	1905	145.1	96.2	114.9
1906	126.0	96.5	115.8	1906	161.5	95.9	118.5
1907	126.4	96.0	118.3	1907	164.8	95.9	124.4
CLOTHING, FACTORY PRODUCT.				**COTTON GOODS.**			
1890	94.8	100.3	99.5	1890	87.7	99.9	102.8
1891	95.6	100.3	99.7	1891	98.3	100.7	98.9
1892	99.6	100.3	99.6	1892	95.8	101.2	100.3
1893	99.0	100.1	100.0	1893	98.2	99.9	103.6
1894	97.0	100.1	97.2	1894	96.1	98.6	96.9
1895	97.7	100.0	98.7	1895	94.9	100.0	96.9
1896	97.1	99.8	99.9	1896	98.8	99.5	104.9
1897	99.6	99.7	100.4	1897	104.6	99.4	101.2
1898	102.5	99.7	101.9	1898	112.5	100.3	97.4
1899	105.9	99.8	103.2	1899	112.1	100.4	97.3
1900	112.2	99.0	103.0	1900	115.5	100.2	100.2
1901	114.9	98.0	106.7	1901	109.0	100.0	110.4
1902	121.7	97.6	103.1	1902	117.2	99.2	110.2
1903	126.9	97.3	105.9	1903	107.2	99.0	123.2
1904	129.4	96.9	110.0	1904	105.3	99.1	119.7
1905	143.7	96.9	111.2	1905	104.9	99.1	125.5
1906	152.5	96.7	115.4	1906	117.5	98.3	139.5
1907	154.5	96.7	115.8	1907	122.3	96.8	157.5

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY INDUSTRIES—Continued.

[Average 1890–1899=100.0.]

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
DYEING, FINISHING, AND PRINTING TEXTILES.			
1890	97.3	101.7	98.6
1891	98.9	101.7	97.5
1892	99.5	101.1	99.4
1893	100.4	99.5	100.7
1894	92.7	98.9	99.4
1895	95.5	99.5	99.6
1896	98.7	99.5	101.1
1897	104.4	98.9	101.0
1898	102.2	99.6	101.5
1899	110.9	99.6	101.2
1900	112.6	99.6	103.3
1901	117.6	99.6	103.5
1902	126.2	99.6	104.3
1903	128.1	99.6	105.0
1904	126.8	99.9	105.6
1905	143.4	100.1	106.0
1906	145.0	99.7	108.0
1907	147.7	99.3	111.3
FLOUR.			
1890	90.3	100.3	99.4
1891	89.4	100.1	100.3
1892	91.6	100.1	100.3
1893	96.1	100.1	99.7
1894	92.8	100.3	98.7
1895	92.4	100.3	98.5
1896	106.5	99.9	99.8
1897	107.1	100.1	100.1
1898	117.2	99.5	101.5
1899	117.7	99.4	101.8
1900	118.7	99.3	103.3
1901	120.6	99.3	107.6
1902	123.4	98.1	110.4
1903	124.0	97.7	111.2
1904	124.0	97.5	111.4
1905	130.2	97.8	111.0
1906	134.2	97.6	112.5
1907	136.8	96.7	116.0
FURNITURE.			
1890	93.7	101.2	99.3
1891	95.3	100.4	101.9
1892	101.4	99.5	102.5
1893	98.5	100.2	100.5
1894	95.2	98.3	99.2
1895	96.1	100.0	97.0
1896	99.0	100.4	97.6
1897	102.8	99.9	100.3
1898	104.5	100.2	98.7
1899	113.4	100.0	103.0
1900	110.0	99.7	103.4
1901	113.5	98.4	110.4
1902	119.8	97.3	117.0
1903	117.2	97.2	118.2
1904	116.3	96.3	119.9
1905	120.7	96.1	122.1
1906	126.3	95.6	125.6
1907	119.9	95.7	127.1
ELECTRICAL APPARATUS AND SUPPLIES.			
1890	54.7	100.0	98.6
1891	55.1	100.0	98.7
1892	57.1	100.1	98.2
1893	65.6	100.1	97.7
1894	79.3	100.4	95.7
1895	100.6	100.4	97.3
1896	130.1	99.6	99.7
1897	137.1	99.9	103.0
1898	132.5	99.7	105.8
1899	169.4	99.9	105.5
1900	203.4	100.1	102.6
1901	213.2	94.1	107.8
1902	231.9	94.1	107.3
1903	249.7	94.1	110.8
1904	226.1	94.1	110.2
1905	295.9	94.0	110.8
1906	425.5	94.0	122.0
1907	458.9	93.3	122.6
FOUNDRY AND MACHINE SHOP.			
1890	101.8	100.5	99.2
1891	101.1	100.4	100.3
1892	94.5	100.2	102.7
1893	99.6	100.0	101.6
1894	87.7	99.9	98.7
1895	93.2	100.1	99.1
1896	93.9	99.8	100.5
1897	93.5	99.7	99.7
1898	108.1	99.9	99.0
1899	125.1	99.4	99.1
1900	126.8	99.2	101.5
1901	132.0	98.1	104.7
1902	139.2	96.6	108.2
1903	149.1	95.4	112.2
1904	133.2	94.6	113.9
1905	155.0	94.8	114.0
1906	168.3	94.8	117.9
1907	161.9	94.6	121.4
GAS.			
1890	110.1	100.6	99.5
1891	95.4	100.7	99.0
1892	91.3	101.0	99.6
1893	84.1	101.0	100.4
1894	100.5	101.0	101.2
1895	95.6	100.7	99.7
1896	93.2	100.9	101.0
1897	111.0	100.8	100.7
1898	129.8	97.3	98.6
1899	91.6	96.3	100.3
1900	104.0	94.8	101.3
1901	99.0	97.4	96.5
1902	121.1	95.3	104.9
1903	119.4	96.3	101.3
1904	138.0	96.2	101.8
1905	141.4	96.2	102.0
1906	150.2	96.5	103.8
1907	160.1	96.1	107.7

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY INDUSTRIES—Continued.

[Average 1890–1899=100.0.]

GLASS.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	99.4	100.1	101.5
1891	108.2	99.9	100.2
1892	101.6	100.0	101.3
1893	97.6	100.1	100.2
1894	93.1	99.8	99.1
1895	92.8	99.9	92.6
1896	95.7	100.0	96.6
1897	95.9	100.3	98.3
1898	104.9	100.0	101.2
1899	108.7	99.9	103.5
1900	110.3	100.3	107.7
1901	112.6	100.0	107.5
1902	115.0	99.9	115.0
1903	116.7	99.7	120.0
1904	117.8	99.6	110.3
1905	119.2	99.4	116.6
1906	121.7	98.6	122.3
1907	127.6	98.6	129.4

HARNESS.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	91.0	100.4	100.2
1891	91.8	100.4	100.6
1892	94.1	100.2	100.6
1893	94.2	100.1	101.0
1894	94.5	100.0	99.0
1895	99.3	99.8	98.5
1896	104.3	99.7	98.7
1897	105.9	99.8	99.5
1898	110.2	99.9	100.7
1899	117.6	99.7	101.2
1900	124.5	99.8	102.0
1901	128.5	99.5	105.6
1902	135.7	99.0	108.7
1903	138.8	98.0	115.8
1904	137.6	97.6	118.0
1905	135.8	97.0	118.6
1906	142.9	96.6	121.6
1907	136.4	95.9	123.5

HATS, FUR.

1890	86.2	100.7	104.4
1891	94.0	100.5	100.5
1892	90.9	100.5	100.0
1893	100.0	100.2	97.5
1894	103.2	100.2	99.6
1895	90.1	100.1	97.8
1896	94.5	100.2	98.8
1897	101.0	100.0	100.6
1898	109.5	99.4	99.8
1899	132.1	98.3	100.9
1900	147.0	98.5	102.4
1901	160.9	98.7	103.0
1902	164.6	94.2	110.3
1903	168.6	92.6	113.8
1904	168.9	92.9	115.7
1905	186.5	92.3	119.2
1906	184.7	92.2	125.2
1907	217.4	91.6	126.4

HOSIERY AND KNIT GOODS.

1890	81.3	101.5	106.1
1891	89.3	101.5	107.3
1892	122.6	101.5	99.0
1893	116.4	100.3	102.5
1894	83.7	95.0	97.7
1895	99.8	100.2	102.9
1896	93.1	100.0	99.8
1897	93.1	100.1	94.7
1898	111.3	100.0	95.5
1899	107.9	100.0	94.7
1900	120.8	98.9	98.0
1901	131.8	98.7	102.4
1902	121.2	98.9	108.7
1903	125.6	98.4	115.5
1904	125.6	98.3	113.5
1905	167.0	98.3	120.8
1906	188.5	98.2	126.4
1907	184.4	97.7	133.4

IRON AND STEEL, BAR.

1890	99.4	102.7	110.3
1891	98.4	101.6	104.9
1892	98.3	101.8	100.0
1893	105.9	101.4	95.7
1894	100.2	101.3	90.1
1895	103.7	100.7	91.7
1896	93.9	101.0	99.3
1897	97.7	97.1	98.0
1898	99.7	96.6	96.3
1899	101.6	95.9	113.7
1900	108.9	97.3	118.2
1901	100.7	98.4	119.7
1902	104.1	98.8	132.8
1903	109.2	98.4	136.5
1904	100.2	97.9	125.6
1905	103.6	98.1	126.9
1906	97.0	97.9	135.7
1907	98.5	97.9	140.4

IRON AND STEEL, BESSEMER CONVERTING.

1890	99.5	98.3	113.3
1891	104.8	98.1	115.9
1892	101.2	101.8	112.3
1893	102.3	99.2	105.5
1894	100.0	100.1	96.1
1895	100.0	100.2	97.3
1896	99.0	101.1	92.5
1897	100.1	100.2	86.3
1898	99.0	101.0	88.1
1899	100.1	100.2	92.8
1900	118.7	91.3	106.2
1901	113.9	94.6	113.1
1902	113.9	94.6	122.6
1903	115.0	96.0	131.8
1904	116.6	91.1	114.7
1905	118.3	91.2	123.3
1906	116.9	91.5	133.8
1907	119.1	90.5	132.6

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY INDUSTRIES—Continued.

[Average 1890–1899=100.0.]

IRON AND STEEL, BLAST FURNACE.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	94.1	100.0	104.4
1891	95.1	100.0	105.3
1892	106.1	100.0	107.1
1893	99.7	100.0	105.2
1894	99.8	100.0	91.4
1895	100.2	100.0	96.5
1896	98.9	100.0	100.1
1897	98.3	100.0	93.4
1898	102.6	100.0	93.9
1899	104.1	100.0	102.8
1900	104.1	100.0	107.3
1901	106.5	100.0	108.1
1902	104.2	100.0	111.2
1903	101.7	100.0	114.4
1904	100.2	99.6	109.6
1905	104.7	100.6	112.6
1906	109.0	100.6	114.1
1907	121.4	100.6	119.8

LEATHER.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	81.7	99.9	102.1
1891	89.9	99.9	102.5
1892	99.7	99.8	102.3
1893	83.9	99.9	102.1
1894	95.5	99.9	98.3
1895	100.9	100.0	98.8
1896	90.5	100.0	98.9
1897	102.9	100.2	98.5
1898	129.4	100.3	96.9
1899	127.1	100.1	99.6
1900	127.9	100.1	98.1
1901	128.0	100.2	101.4
1902	117.6	100.1	104.3
1903	132.5	100.1	106.3
1904	143.0	99.5	108.2
1905	147.3	99.9	108.3
1906	154.1	99.9	109.2
1907	146.6	99.9	111.8

LIQUORS, MALT.

1890	92.8	100.8	97.7
1891	92.9	100.3	98.8
1892	94.9	100.5	98.3
1893	103.2	100.5	98.8
1894	104.5	100.5	99.5
1895	102.0	100.4	100.2
1896	101.2	99.8	100.5
1897	103.1	99.9	101.1
1898	101.1	98.7	102.5
1899	104.5	98.8	102.7
1900	104.4	96.4	108.0
1901	115.4	94.2	111.2
1902	118.1	91.0	117.5
1903	126.1	89.9	120.3
1904	127.2	89.7	122.2
1905	128.2	89.5	124.4
1906	134.2	87.9	127.8
1907	143.6	87.0	132.9

LUMBER.

1890	94.2	100.4	102.8
1891	95.7	100.2	102.4
1892	96.1	100.2	102.1
1893	95.6	99.7	101.7
1894	95.3	99.7	97.8
1895	96.3	100.1	97.2
1896	99.1	100.1	97.0
1897	105.0	99.9	97.4
1898	107.6	99.8	99.4
1899	111.3	99.8	102.2
1900	115.5	99.5	104.4
1901	118.7	99.1	106.5
1902	123.6	98.4	109.5
1903	124.9	98.3	113.3
1904	127.3	98.1	114.4
1905	131.3	98.1	117.8
1906	133.0	97.1	123.7
1907	130.8	96.9	127.6

MARBLE AND STONE WORK.

1890	103.8	101.8	98.5
1891	102.5	100.9	99.5
1892	103.4	100.4	100.3
1893	102.0	100.5	99.7
1894	96.3	100.6	98.0
1895	96.4	100.6	97.0
1896	94.9	99.6	101.0
1897	95.7	99.2	101.6
1898	98.6	99.3	101.2
1899	106.3	97.2	103.2
1900	107.0	96.9	104.9
1901	115.9	96.1	109.0
1902	116.0	95.5	113.5
1903	112.3	94.0	118.6
1904	104.4	93.9	118.9
1905	106.8	94.0	119.3
1906	110.3	93.7	121.3
1907	108.9	93.6	125.7

PAPER AND WOOD PULP.

1890	92.0	100.5	96.5
1891	95.4	100.4	98.8
1892	98.6	100.4	93.6
1893	100.6	99.9	99.7
1894	93.4	100.9	98.7
1895	100.6	100.7	99.2
1896	103.6	100.7	100.6
1897	107.3	100.8	99.8
1898	105.6	101.2	99.3
1899	102.6	99.5	108.6
1900	114.9	99.6	108.7
1901	115.4	98.6	110.9
1902	118.3	93.0	111.1
1903	123.5	92.7	118.7
1904	135.7	91.1	122.3
1905	136.7	92.8	122.4
1906	146.4	93.1	121.1
1907	157.3	89.8	133.3

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY INDUSTRIES—Continued.

[Average 1890-1899=100.0.]

PLANING MILL.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	92.4	101.2	99.3
1891	93.4	100.4	100.8
1892	95.6	100.5	100.8
1893	94.9	100.1	100.7
1894	94.9	100.6	97.7
1895	99.2	99.3	98.2
1896	101.4	99.4	98.4
1897	102.2	99.7	99.5
1898	104.6	99.5	100.9
1899	115.5	99.2	103.8
1900	115.5	99.3	104.9
1901	125.3	99.0	107.9
1902	128.0	98.2	110.8
1903	135.4	98.0	113.6
1904	137.2	97.6	114.8
1905	146.8	97.5	116.6
1906	155.3	96.4	120.6
1907	152.7	96.4	124.6

POTTERY.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	101.8	99.7	98.8
1891	104.8	99.6	99.7
1892	100.8	99.7	100.1
1893	103.1	99.6	102.5
1894	101.2	99.6	99.6
1895	93.3	100.0	96.4
1896	95.0	100.2	95.3
1897	98.6	100.6	99.9
1898	95.4	100.6	104.9
1899	99.7	100.4	103.0
1900	102.0	100.1	99.8
1901	100.7	100.3	102.4
1902	99.5	100.3	104.6
1903	103.5	99.2	107.7
1904	109.9	99.6	109.6
1905	115.8	100.0	111.4
1906	118.1	99.8	112.9
1907	118.0	99.8	113.8

PRINTING AND BINDING, BOOK AND JOB.

1890	97.3	101.0	97.8
1891	98.5	101.0	99.6
1892	96.9	100.5	99.2
1893	96.9	100.4	100.2
1894	95.0	100.1	99.6
1895	97.0	100.2	99.5
1896	98.2	100.1	100.3
1897	107.0	100.2	99.2
1898	106.2	99.4	101.2
1899	112.2	97.2	103.6
1900	117.0	95.1	100.3
1901	122.0	94.4	110.7
1902	123.9	93.2	114.3
1903	126.6	93.1	116.1
1904	134.3	92.4	118.9
1905	139.0	92.0	120.6
1906	149.8	90.7	125.9
1907	153.8	90.1	131.0

PRINTING, NEWSPAPER.

1890	105.4	100.2	103.0
1891	107.2	100.1	99.6
1892	116.2	100.6	98.8
1893	107.4	101.3	98.0
1894	94.7	100.5	97.4
1895	88.7	100.4	96.3
1896	97.0	100.2	98.6
1897	96.3	100.0	99.2
1898	91.6	99.1	102.8
1899	92.1	97.9	106.1
1900	89.1	97.6	106.3
1901	90.3	97.4	106.3
1902	96.7	97.1	109.3
1903	95.5	96.2	113.4
1904	92.0	95.7	114.1
1905	99.0	96.2	116.1
1906	104.9	95.4	118.4
1907	108.4	94.8	122.6

SHIPBUILDING.

1890	86.7	100.8	97.5
1891	89.7	100.3	97.2
1892	93.0	100.3	97.9
1893	87.0	100.1	98.7
1894	86.0	99.7	95.6
1895	101.3	100.0	101.0
1896	91.2	99.9	102.0
1897	89.3	99.3	104.0
1898	122.2	99.7	103.8
1899	147.6	99.8	102.3
1900	156.2	99.9	102.6
1901	159.5	98.8	104.2
1902	160.5	98.2	108.2
1903	163.9	97.4	110.3
1904	164.7	96.0	112.5
1905	171.7	96.4	112.3
1906	178.9	95.9	117.7
1907	177.1	95.7	120.9

SILK GOODS.

1890	85.2	103.0	99.7
1891	83.2	103.0	97.1
1892	91.5	102.1	99.8
1893	88.7	99.0	100.5
1894	93.3	98.6	100.1
1895	104.7	98.6	101.9
1896	103.2	98.8	101.3
1897	113.6	98.9	99.4
1898	117.4	99.1	99.7
1899	121.7	99.0	100.4
1900	113.5	99.3	100.3
1901	122.5	99.1	99.9
1902	144.9	99.0	101.9
1903	138.1	98.8	104.9
1904	130.8	97.9	106.3
1905	145.7	98.0	107.0
1906	140.9	98.0	109.9
1907	148.2	97.6	116.9

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TABLE III.—RELATIVE WAGES AND HOURS OF LABOR, 1890 TO 1907, BY INDUSTRIES—Concluded.

[Average 1890-1899=100.0.]

SLAUGHTERING AND MEAT PACKING.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	89.3	99.5	102.2
1891	90.0	99.5	102.1
1892	90.5	99.5	102.7
1893	96.9	100.2	103.4
1894	99.7	100.2	97.9
1895	101.8	100.3	97.8
1896	103 3	100.3	97.6
1897	106.5	100.3	98.0
1898	108.9	100.2	98.0
1899	107.5	100.0	100.2
1900	107.2	100.3	103.6
1901	109.1	100.3	103.3
1902	114.9	99.3	107.1
1903	115.3	99.2	113.6
1904	115.0	99.2	114.6
1905	108.7	99.0	113.5
1906	111.3	(a)	115.2
1907	107.9	(a)	116.0

STREETS AND SEWERS, MUNICIPAL WORK.

1890	85.8	101.1	99.8
1891	86.2	100.6	99.5
1892	94.6	100.9	98.3
1893	98.8	101.5	98.1
1894	115.1	100.7	100.9
1895	106.1	100.0	99.7
1896	98.4	100.6	98.1
1897	104.3	100.1	98.7
1898	102.3	98.7	100.9
1899	108.2	95.7	105.8
1900	106.6	93.3	110.3
1901	112.0	92.6	110.6
1902	99.4	92.7	111.0
1903	93.5	91.8	111.8
1904	100.1	91.1	113.8
1905	109.3	90.9	113.0
1906	116.6	91.0	114.9
1907	130.7	90.5	121.6

STREETS AND SEWERS, CONTRACT WORK.

Year.	Relative number of employees.	Relative hours per week.	Relative wages per hour.
1890	102.3	101.2	95.7
1891	121.7	101.4	98.1
1892	112.3	101.3	98.2
1893	109.7	101.0	95.9
1894	107.3	101.0	97.0
1895	91.1	100.6	98.5
1896	98.9	99.7	102.9
1897	85.6	97.4	103.7
1898	81.4	97.5	105.2
1899	89.6	99.0	104.9
1900	99.4	98.8	107.1
1901	100.1	96.5	114.9
1902	100.8	95.2	120.2
1903	103.9	95.1	124.3
1904	104.2	95.1	125.3
1905	101.3	94.7	128.6
1906	102.5	93.3	139.8
1907	97.5	92.7	145.7

TOBACCO, CIGARS.

1890	76.0	100.1	100.3
1891	85.2	99.6	100.6
1892	90.3	99.2	99.6
1893	100.5	99.7	100.0
1894	103.5	99.9	99.0
1895	109.9	99.8	97.2
1896	95.2	100.4	98.6
1897	107.4	100.0	102.4
1898	107.7	100.3	101.1
1899	119.9	101.0	101.3
1900	93.9	99.8	100.8
1901	106.1	100.6	112.5
1902	116.0	100.9	110.0
1903	118.8	101.4	116.9
1904	118.1	100.4	119.0
1905	123.5	100.1	120.9
1906	116.6	99.7	131.1
1907	116.6	99.5	132.4

WOOLEN AND WORSTED GOODS.

1890	91.8	101.0	98.1
1891	103.5	101.0	99.1
1892	104.3	101.0	99.6
1893	96.2	99.6	101.5
1894	90.8	98.2	97.2
1895	100.5	100.3	96.8
1896	97.2	100.2	100.9
1897	106.5	98.1	100.2
1898	109.7	100.2	102.5
1899	100.0	100.3	103.7
1900	109.4	100.1	110.4
1901	112.1	100.2	110.6
1902	121.3	99.3	113.5
1903	134.1	99.3	115.2
1904	138.3	98.4	116.4
1905	137.7	98.8	118.3
1906	142.5	98.6	124.0
1907	166.5	98.0	131.9

a Hours not reported.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES.

BAKERY, BREAD.

BAKERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Albany, N. Y.	2	10	10	60.00	60.00	$0.2300	$0.2383
Atlanta, Ga.	2	11	15	60.00	60.00	.1901	.1800
Baltimore, Md.	2	25	35	60.40	60.29	.2261	.2187
Birmingham, Ala.	2	11	12	60.00	60.00	.2000	.2153
Boston, Mass.	3	80	66	60.00	60.00	.2508	.2560
Buffalo, N. Y.	2	54	58	58.78	59.17	.2391	.2559
Butte, Mont.	2	14	14	62.00	48.00	.3721	.5655
Charleston, S. C.	2	9	9	61.67	61.67	.1773	.1809
Chicago, Ill.	3	132	129	54.00	54.00	.3025	.3029
Cincinnati, Ohio.	3	77	77	60.78	60.78	.2123	.2124
Cleveland, Ohio.	3	64	73	58.75	58.90	.2415	.2460
Dallas, Tex.	2	9	9	60.00	60.00	.2500	.2509
Denver, Colo.	2	35	38	57.00	57.00	.2757	.2895
Des Moines, Iowa.	2	6	6	60.00	60.00	.2778	.2875
Detroit, Mich.	2	51	52	54.00	54.00	.2651	.2707
Dubuque, Iowa.	2	12	10	60.00	60.00	.2445	.2553
Duluth, Minn.	2	15	13	60.00	60.00	.2467	.2500
Fall River, Mass.	2	8	8	60.00	60.00	.2396	.2396
Grand Rapids, Mich.	2	17	17	60.00	60.00	.2412	.2412
Indianapolis, Ind.	3	57	66	60.00	60.00	.2406	.2374
Jacksonville, Fla.	2	14	13	63.43	63.69	.1968	.1547
Jersey City, N. J.	2	32	33	60.00	60.00	.2617	.2639
Kansas City, Mo.	2	22	22	55.64	55.64	.2792	.2792
Little Rock, Ark.	2	9	9	76.67	76.67	.2068	.2160
Los Angeles, Cal.	2	34	26	60.00	60.00	.3000	.3000
Louisville, Ky.	3	12	12	60.00	60.00	.2389	.2459
Lynn, Mass.	2	9	10	54.00	54.00	.3004	.3056
Manchester, N. H.	2	6	6	60.00	60.00	.2361	.2361
Memphis, Tenn.	2	17	18	60.00	60.00	.2696	.2731
Milwaukee, Wis.	2	37	46	60.00	60.00	.2128	.2168
Minneapolis, Minn.	2	19	18	60.00	60.00	.2557	.2669
Montgomery, Ala.	4	18	18	80.00	80.00	.1414	.1398
Nashville, Tenn.	2	12	9	60.50	60.67	.2121	.2236
Newark, N. J.	2	85	85	60.00	60.00	.2663	.2663
New Haven, Conn.	2	27	27	60.00	60.00	.2364	.2235
New Orleans, La.	3	41	41	73.24	69.78	.1929	.2027
New York, N. Y.(a)	6	344	329	60.00	60.00	.2762	.2787
Norfolk, Va.	2	21	26	60.00	60.00	.2477	.2647
Omaha, Nebr.	2	8	8	60.00	60.00	.2375	.2375
Peoria, Ill.	2	13	9	55.85	60.00	.2308	.2241
Philadelphia, Pa.	3	212	237	67.79	67.73	.2154	.2126
Pittsburg, Pa.(b)	3	111	124	60.00	60.00	.2396	.2438
Portland, Me.	2	22	22	58.36	58.36	.2445	.2468
Portland, Oreg.	2	13	15	60.00	60.00	.3392	.3545
Providence, R. I.	2	9	9	60.00	60.00	.2537	.2537
Richmond, Va.	3	30	30	52.80	52.80	.2697	.2751
Rochester, N. Y.	2	33	34	60.00	60.00	.2323	.2334
St. Louis, Mo.	3	93	91	54.00	54.00	.2787	.2784
St. Paul, Minn.	2	46	42	60.00	60.00	.2576	.2595
Salt Lake City, Utah.	2	13	21	60.00	60.00	.3064	.3095
San Antonio, Tex.	2	16	17	61.69	60.59	.2309	.2384
San Francisco, Cal.	3	73	71	59.75	59.66	.3603	.3634
Scranton, Pa.	2	14	13	61.29	61.23	.2093	.2200
Seattle, Wash.	2	12	13	60.00	60.00	.3250	.3481
Sioux Falls, S. Dak.	2	6	6	72.00	72.00	.1713	.1713
Syracuse, N. Y.	3	12	21	60.00	60.00	.2500	.2436
Tacoma, Wash.	2	9	8	61.33	60.00	.3262	.3490
Tampa, Fla.	2	15	15	68.40	68.40	.1890	.1890
Terre Haute, Ind.	2	23	20	60.00	60.00	.2348	.2383
Toledo, Ohio.	2	15	14	54.00	54.00	.2877	.2871
Topeka, Kans.	2	16	16	60.00	60.00	.2396	.2427
Trenton, N. J.	2	20	20	50.00	50.00	.2744	.2744
Washington, D. C.	2	50	56	60.00	57.64	.2815	.3078
Wheeling, W. Va.	2	16	18	60.00	60.00	.2271	.2315
Wilkes-Barre, Pa.	2	9	9	60.00	60.00	.2369	.2574
Wilmington, Del.	2	15	15	61.20	61.20	.2331	.2381
Worcester, Mass.	2	15	18	60.00	60.00	.2622	.2556

(a) Greater New York.

(b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BLACKSMITHING AND HORSESHOEING.

FLOOR MEN, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Albany, N. Y.	2	5	5	54.00	53.00	$0.2778	$0.3019
Atlanta, Ga.	2	5	4	60.00	60.00	.2650	.2813
Baltimore, Md.	2	4	4	53.00	53.00	.2784	.2784
Birmingham, Ala.	2	5	5	53.80	53.80	.3346	.3459
Boston, Mass.	4	13	13	53.00	53.00	.3121	.3585
Buffalo, N. Y.	2	5	5	53.00	53.00	.3113	.3113
Butte, Mont.	2	3	3	47.00	47.00	.5213	.6383
Chicago, Ill.	3	9	9	53.00	53.00	.3679	.3962
Cincinnati, Ohio.	3	9	9	53.00	53.00	.3742	.3742
Cleveland, Ohio.	3	3	3	53.33	53.33	.3188	.3562
Denver, Colo.	2	5	6	53.40	53.33	.3932	.3937
Des Moines, Iowa.	2	3	3	54.00	54.00	.2778	.2778
Detroit, Mich.	3	4	4	53.75	53.50	.2937	.3226
Dubuque, Iowa.	2	3	2	59.00	59.00	.2797	.2797
Duluth, Minn.	2	3	3	54.00	53.00	.3704	.4151
Fall River, Mass.	2	3	3	55.33	53.67	.2542	.2607
Grand Rapids, Mich.	2	6	6	59.00	57.33	.2585	.2930
Indianapolis, Ind.	3	5	5	53.00	53.00	.3396	.3736
Jacksonville, Fla.	2	4	4	54.00	54.00	.2222	.2292
Los Angeles, Cal.	3	7	6	54.00	54.00	.3333	.3333
Louisville, Ky.	3	3	3	56.00	54.00	.2778	.2871
Lynn, Mass.	2	5	5	53.00	53.00	.2830	.2830
Manchester, N. H.	2	3	3	54.00	54.00	.2500	.2500
Memphis, Tenn.	2	6	4	53.00	53.00	.3396	.3962
Milwaukee, Wis.	3	5	5	57.00	57.00	.2484	.2558
Minneapolis, Minn.	4	7	8	59.00	59.00	.2785	.3063
Montgomery, Ala.	4	9	8	54.00	54.00	.2099	.2546
New Haven, Conn.	2	7	6	53.71	53.67	.2793	.2795
New Orleans, La.	3	4	4	53.00	53.00	.2901	.2901
New York, N. Y.(a)	6	17	20	53.00	53.00	.3862	.3933
Norfolk, Va.	2	8	8	53.00	53.00	.3325	.3325
Omaha, Nebr.	2	5	5	56.40	56.40	.3200	.3200
Philadelphia, Pa.	5	15	18	53.00	53.00	.3264	.3585
Portland, Oreg.	2	4	4	53.00	53.00	.3608	.3679
Providence, R. I.	2	4	4	53.00	53.00	.2759	.2547
Richmond, Va.	2	5	5	59.20	59.20	.2138	.2205
Rochester, N. Y.	2	4	5	54.00	54.00	.3056	.3000
St. Louis, Mo.	4	47	45	53.00	53.00	.3384	.3383
St. Paul, Minn.	2	3	3	53.00	53.00	.3302	.3962
Salt Lake City, Utah.	2	2	2	54.00	54.00	.3364	.3645
San Antonio, Tex.	3	3	3	60.00	60.00	.1833	.1750
San Francisco, Cal.	2	6	6	53.00	53.00	.5660	.5660
Seattle, Wash.	2	4	4	54.00	54.00	.3611	.3959
Syracuse, N. Y.	3	6	6	53.67	53.67	.3077	.3262
Tacoma, Wash.	2	4	4	54.00	54.00	.3403	.3889
Terre Haute, Ind.	2	4	4	54.00	54.00	.2778	.2778
Toledo, Ohio.	3	7	7	55.00	55.00	.2970	.3271
Washington, D. C.	2	8	8	53.00	53.00	.3325	.3396
Wilmington, Del.	2	2	2	56.00	56.00	.2667	.2667
Worcester, Mass.	2	5	5	54.00	53.00	.2778	.2830

FORGEMEN, Male.

Albany, N. Y.	2	4	4	54.00	53.00	$0.3333	$0.3396
Atlanta, Ga.	2	4	4	60.00	60.00	.3063	.3000
Baltimore, Md.	2	3	3	53.00	53.00	.2768	.2768
Birmingham, Ala.	2	4	5	53.75	53.60	.3907	.3974
Boston, Mass.	4	11	11	53.00	53.00	.3482	.3654
Buffalo, N. Y.	2	7	7	53.00	53.00	.3639	.3639
Butte, Mont.	2	2	2	47.00	47.00	.5745	.6383
Chicago, Ill.	3	10	10	53.00	53.00	.4151	.4471
Cincinnati, Ohio.	3	8	8	53.00	53.00	.4245	.4245
Cleveland, Ohio.	2	2	2	53.50	53.50	.3716	.4348
Denver, Colo.	2	3	3	53.33	53.33	.3937	.3937
Des Moines, Iowa.	2	3	2	54.00	54.00	.3333	.3611
Detroit, Mich.	3	5	5	53.60	53.40	.3580	.3933
Dubuque, Iowa.	2	3	3	59.00	55.67	.3051	.3051
Fall River, Mass.	2	2	2	56.00	53.50	.3033	.3180
Grand Rapids, Mich.	2	3	3	59.00	55.67	.3136	.3324
Indianapolis, Ind.	3	4	4	53.00	53.00	.3396	.3538

(a) Greater New York.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BLACKSMITHING AND HORSESHOEING—Concluded.

FORGEMEN, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Jacksonville, Fla	2	3	3	54.00	54.00	$0.3055	$0.3055
Los Angeles, Cal	2	3	3	54.00	54.00	.3889	.4074
Louisville, Ky	3	5	4	56.40	54.00	.3169	.3449
Lynn, Mass	2	5	5	53.00	53.00	.3208	.3208
Manchester, N. H	2	4	4	54.00	54.00	.2778	.2778
Memphis, Tenn	2	6	5	53.00	53.00	.3962	.3962
Milwaukee, Wis	3	3	3	57.33	57.33	.3353	.3353
Minneapolis, Minn	3	4	4	59.00	59.00	.3051	.3389
Montgomery, Ala	4	5	5	54.00	54.00	.3000	.3555
New Haven, Conn	2	7	6	53.71	53.67	.3351	.3354
New Orleans, La	3	3	3	53.00	53.00	.3585	.3585
New York, N. Y.(a)	6	16	15	53.00	53.00	.4422	.4443
Norfolk, Va	2	6	6	53.00	53.00	.3962	.3962
Omaha, Nebr	2	6	6	57.00	57.00	.3695	.3695
Philadelphia, Pa	5	14	14	53.00	53.00	.3598	.4083
Portland, Oreg	2	2	2	53.00	53.00	.4245	.4623
Providence, R. I	2	2	2	53.00	53.00	.3208	.3113
Richmond, Va	2	4	4	59.25	59.25	.2601	.2601
Rochester, N. Y	2	2	2	54.00	54.00	.3333	.3333
St. Louis, Mo	4	18	18	53.00	53.00	.3931	.3931
St Paul, Minn	2	3	3	53.00	53.00	.3490	.4528
Salt Lake City, Utah	2	2	2	54.00	54.00	.3645	.3645
San Antonio, Tex	3	3	3	60.00	60.00	.2500	.2588
San Francisco, Cal	2	5	5	53.00	53.00	.5773	.5773
Seattle, Wash	2	4	4	54.00	54.00	.4028	.4514
Syracuse, N. Y	2	2	2	53.50	53.50	.3648	.3926
Tacoma, Wash	2	2	2	54.00	54.00	.3797	.4246
Terre Haute, Ind	2	4	4	54.00	54.00	.3333	.3333
Toledo, Ohio	3	7	8	56.00	55.63	.3264	.3564
Washington, D. C	2	2	2	53.00	53.00	.3727	.3585
Wilmington, Del	2	2	2	56.00	56.00	.2844	.3200
Worcester, Mass	2	5	5	54.00	53.00	.3278	.3339

BUILDING TRADES.

BRICKLAYERS, Male.

Albany, N. Y	3	35	34	48.00	47.53	$0.4943	$0.5794
Atlanta, Ga	3	37	24	56.03	54.25	.4022	.4449
Augusta, Ga	3	43	33	54.00	54.00	.3988	.3939
Baltimore, Md	3	120	76	48.00	48.00	.6365	.6250
Birmingham, Ala	3	21	35	49.71	49.03	.6036	.6121
Boston, Mass	7	110	107	47.67	47.63	.5891	.5967
Buffalo, N. Y	4	87	80	48.00	48.00	.5500	.5500
Butte, Mont	2	16	11	48.00	48.00	.8047	.8750
Charleston, S. C	3	22	22	53.64	53.00	.3916	.3962
Chicago, Ill	4	484	309	45.24	45.33	.6265	.6270
Cincinnati, Ohio	4	144	142	45.00	45.00	.6214	.6280
Cleveland, Ohio	6	152	187	48.00	48.00	.6000	.6000
Dallas, Tex	2	31	22	48.00	48.00	.7242	.7500
Denver, Colo	3	36	30	44.00	44.00	.7031	.7500
Des Moines, Iowa	3	33	29	48.00	48.00	.6008	.6293
Detroit, Mich	4	154	178	48.00	48.00	.5720	.6004
Dubuque, Iowa	2	12	11	48.00	48.00	.5719	.6000
Fall River, Mass	2	18	17	48.00	48.00	.5000	.5250
Grand Rapids, Mich	2	30	18	48.00	48.00	.5000	.5500
Hartford, Conn	2	41	51	44.00	44.00	.5671	.6025
Houston, Tex	3	21	28	44.00	44.00	.7500	.7500
Indianapolis, Ind	3	51	66	45.47	45.36	.6000	.6500
Jacksonville, Fla	3	42	36	48.00	48.00	.5000	.5000
Jersey City, N. J	3	59	63	44.00	44.00	.6500	.6500
Kansas City, Mo	2	24	27	48.00	48.00	.6250	.6583
Los Angeles, Cal	2	31	39	48.00	48.00	.7500	.7500
Louisville, Ky	3	60	66	48.00	48.00	.6000	.6076
Lynn, Mass	2	20	20	48.00	48.00	.5500	.5500
Manchester, N. H	2	12	10	48.00	48.00	.5000	.5000
Memphis, Tenn	2	24	37	44.00	44.00	.6875	.7000
Milwaukee, Wis	4	73	57	48.00	48.00	.5606	.6044
Minneapolis, Minn	6	172	111	48.52	48.92	.5983	.5914

(a) Greater New York.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Continued.

BRICKLAYERS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Mobile, Ala	3	26	28	48.00	50.79	$0.6250	$0.6143
Montgomery, Ala	3	83	72	54.00	54.00	.4964	.4944
Nashville, Tenn	2	53	40	53.51	53.00	.5179	.6100
Newark, N. J	3	148	72	44.00	44.00	.6500	.6500
New Haven, Conn	2	50	33	48.00	48.00	.5066	.5511
New Orleans, La	3	54	60	48.00	48.00	.6287	.6400
New York, N. Y. (a)	9	546	491	44.00	44.00	.7000	.7000
Norfolk, Va	2	15	19	48.00	48.00	.7083	.7336
Omaha, Nebr	2	37	29	44.00	44.00	.6250	.6250
Peoria, Ill	3	54	44	48.00	48.00	.6250	.6250
Philadelphia, Pa	7	327	360	44.00	44.00	.6250	.6250
Pittsburg, Pa. (b)	3	59	71	48.00	48.00	.6169	.6500
Portland, Me	2	37	49	48.00	48.00	.5000	.5000
Portland, Oreg	2	41	43	48.00	46.51	.7210	.8067
Providence, R. I	2	23	23	48.00	44.00	.5000	.5500
Racine, Wis	2	29	33	48.00	48.00	.6147	.6303
Richmond, Va	4	96	76	48.00	48.00	.6276	.6391
Rochester, N. Y	3	119	145	48.00	48.00	.5300	.5700
St. Louis, Mo	4	81	84	44.00	44.00	.7370	.7381
St. Paul, Minn	4	67	80	48.00	48.00	.6060	.5813
Salt Lake City, Utah	3	30	33	44.00	44.00	.7333	.7424
San Antonio, Tex	3	15	20	48.00	48.00	.7200	.7500
San Francisco, Cal	4	197	182	44.00	44.00	.8890	.8777
Scranton, Pa	3	42	43	48.00	48.00	.5000	.5500
Seattle, Wash	2	6	14	44.00	44.00	.7500	.7946
Sioux Falls, S. Dak	2	9	8	52.00	51.75	.5000	.5000
Syracuse, N. Y	2	17	18	48.00	48.00	.5824	.5694
Tacoma, Wash	2	7	15	44.00	44.00	.7411	.7875
Tampa, Fla	2	25	20	48.00	48.00	.6250	.7000
Terre Haute, Ind	4	70	73	48.00	48.00	.6007	.6250
Toledo, Ohio	2	40	42	48.00	48.00	.5544	.6095
Topeka, Kans	2	7	8	48.00	48.00	.6250	.6250
Trenton, N. J	3	50	55	44.00	44.00	.6000	.6000
Washington, D. C	3	102	73	48.00	48.00	.6250	.6250
Wheeling, W. Va	2	38	29	48.00	48.00	.6000	.6000
Wilkes-Barre, Pa	2	59	60	48.00	48.00	.5686	.5022
Wilmington, Del	4	86	88	48.00	46.73	.5451	.5500
Worcester, Mass	2	56	52	48.00	48.00	.5000	.5000

CARPENTERS, Male.

Albany, N. Y	2	89	82	48.00	48.00	$0.3345	$0.3548
Atlanta, Ga	3	36	36	59.39	58.83	.2742	.2805
Augusta, Ga	3	88	106	55.36	54.00	.2202	.2084
Baltimore, Md	5	142	132	48.00	48.00	.4085	.4228
Birmingham, Ala	4	86	91	48.00	48.00	.3738	.4000
Boston, Mass	6	157	145	48.11	48.12	.4047	.4238
Buffalo, N. Y	3	105	114	48.00	48.00	.4023	.4021
Butte, Mont	3	88	53	48.00	48.00	.6406	.7500
Charleston, S. C	3	74	77	53.80	53.00	.2268	.2514
Chicago, Ill	3	160	152	44.00	44.00	.5500	.5625
Cincinnati, Ohio	4	353	373	48.00	44.88	.4023	.4525
Cleveland, Ohio	3	71	79	48.00	48.00	.4407	.4456
Dallas, Tex	2	30	23	48.00	48.00	.3750	.4500
Denver, Colo	2	43	16	44.00	44.00	.5000	.5500
Des Moines, Iowa	4	90	74	48.00	48.00	.3903	.4014
Detroit, Mich	6	302	337	48.00	48.00	.3488	.3632
Dubuque, Iowa	2	17	27	48.00	48.00	.3691	.4102
Duluth, Minn	3	56	80	48.00	48.00	.4018	.4447
Fall River, Mass	3	67	62	48.00	48.00	.3280	.3539
Grand Rapids, Mich	3	55	66	54.00	54.00	.3398	.3515
Harrisburg, Pa	2	17	13	54.00	54.00	.2882	.2863
Hartford, Conn	2	33	38	44.00	44.00	.4063	.4400
Houston, Tex	2	19	22	45.47	45.27	.3799	.4560
Indianapolis, Ind	3	79	60	52.71	52.80	.3415	.3417
Jacksonville, Fla	3	151	144	48.00	48.00	.3148	.3158
Jersey City, N. J	2	32	28	44.00	44.00	.5000	.5000
Kansas City, Mo	2	63	59	48.00	48.00	.4000	.4000
Los Angeles, Cal	2	135	85	48.00	48.00	.4375	.4559
Louisville, Ky	3	87	101	57.72	51.92	.2790	.3441

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Continued.

CARPENTERS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Lynn, Mass	2	32	30	48.00	48.00	$0.4100	$0.4100
Manchester, N. H	2	118	134	54.00	54.00	.2559	.2575
Memphis, Tenn	2	21	21	44.00	44.00	.4000	.4310
Milwaukee, Wis	4	59	80	48.00	46.25	.3358	.3683
Minneapolis, Minn	3	192	122	48.00	48.00	.4000	.4250
Mobile, Ala	3	43	59	53.30	53.08	.3242	.3147
Montgomery, Ala	4	188	183	58.60	58.58	.2735	.2917
Nashville, Tenn	2	33	40	56.73	58.05	.2697	.2463
Newark, N. J	3	308	280	44.00	44.00	.4750	.5000
New Haven, Conn	2	39	61	48.00	48.00	.4063	.4063
New Orleans, La	4	88	65	49.25	49.38	.3598	.3922
New York, N. Y. (a)	13	564	831	44.00	44.00	.5746	.6070
Norfolk, Va	2	54	57	48.00	48.00	.3997	.4307
Omaha, Nebr	2	34	25	46.00	46.40	.4147	.4260
Peoria, Ill	4	68	61	48.00	48.00	.4500	.4500
Philadelphia, Pa	7	206	181	44.87	44.11	.4497	.4616
Pittsburg, Pa. (b)	2	203	231	48.00	48.00	.4375	.4916
Portland, Me	2	81	83	54.00	53.28	.2984	.2975
Portland, Oreg	3	54	68	48.00	48.00	.4306	.4688
Providence, R. I	2	52	54	48.00	44.00	.3496	.4208
Racine, Wis	4	62	40	48.00	48.00	.4238	.4763
Richmond, Va	4	81	84	49.41	49.29	.3339	.3403
Rochester, N. Y	2	47	41	48.00	48.00	.3787	.4014
St. Louis, Mo	3	51	68	44.00	44.00	.5500	.5956
St. Paul, Minn	3	187	139	48.00	48.00	.3941	.4482
Salt Lake City, Utah	2	29	34	46.48	47.71	.4690	.4626
San Antonio, Tex	2	16	25	48.00	48.00	.3750	.3875
San Francisco, Cal	4	118	149	44.00	44.00	.6081	.6250
Scranton, Pa	2	82	67	48.00	48.00	.3429	.3846
Sioux Falls, S. Dak	2	28	28	60.00	60.00	.2607	.2616
Springfield, Ill	2	36	32	49.00	49.13	.3926	.3917
Syracuse, N. Y	2	17	17	48.00	48.00	.3596	.4000
Tacoma, Wash	2	70	39	47.20	44.00	.4536	.5032
Tampa, Fla	2	94	71	48.00	48.00	.3750	.4100
Terre Haute, Ind	5	113	112	52.04	51.70	.3232	.3343
Toledo, Ohio	2	54	79	58.22	59.47	.3162	.3161
Trenton, N. J	2	37	33	44.00	44.00	.4554	.4667
Washington, D. C	3	159	236	48.00	48.00	.5000	.5000
Wheeling, W. Va	2	47	42	47.00	48.07	.3790	.3761
Wilkes-Barre, Pa	3	77	79	48.00	48.00	.3434	.3496
Williamsport, Pa	3	49	36	54.00	51.33	.2800	.3500
Wilmington, Del	3	72	72	46.06	45.78	.3757	.4000
Worcester, Mass	2	265	268	48.00	48.00	.3166	.3216

HOD CARRIERS, Male.

Albany, N. Y	3	64	65	48.00	46.95	$0.2553	$0.2805
Atlanta, Ga	2	36	9	54.83	56.22	.1504	.1511
Baltimore, Md	6	110	98	48.00	48.00	.3125	.3125
Boston, Mass	7	161	143	46.91	46.88	.3214	.3219
Buffalo, N. Y	5	113	104	50.34	50.02	.1983	.2012
Butte, Mont	4	38	20	45.47	46.00	.6086	.6813
Charleston, S. C	2	34	34	53.59	53.00	.1120	.1240
Chicago, Ill	6	1,075	789	45.66	45.50	.3572	.3613
Cincinnati, Ohio	6	96	102	44.92	44.92	.3672	.3664
Cleveland, Ohio	7	186	217	47.42	47.32	.2560	.2600
Dallas, Tex	2	37	20	50.92	50.40	.2126	.2469
Davenport, Iowa	2	15	14	48.00	48.00	.2604	.2902
Denver, Colo	8	63	62	44.00	44.00	.3715	.3851
Des Moines, Iowa	5	71	65	49.18	49.85	.2453	.2419
Detroit, Mich	6	282	363	48.00	47.93	.2437	.2480
Dubuque, Iowa	5	30	24	48.60	48.00	.3028	.3333
Evansville, Ind	2	17	12	48.00	48.00	.2906	.2956
Fall River, Mass	2	22	21	54.00	54.00	.1881	.1944
Grand Rapids, Mich	3	50	33	53.70	53.64	.2139	.2064
Harrisburg, Pa	3	27	20	50.37	50.50	.2924	.2867
Hartford, Conn	2	46	55	44.00	44.00	.3306	.3500
Houston, Tex	3	32	41	50.00	50.10	.1975	.1968
Indianapolis, Ind	6	71	74	46.11	46.03	.2833	.2751
Jacksonville, Fla	4	65	57	48.00	48.00	.1875	.1875

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Continued.

HOD CARRIERS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Jersey City, N. J.	6	111	106	44.00	44.00	$0.3750	$0.3750
Kansas City, Mo.	5	63	70	46.10	46.00	.3500	.3500
Little Rock, Ark.	2	19	23	48.00	46.96	.2336	.2324
Los Angeles, Cal.	4	71	48	48.00	48.00	.3798	.3848
Louisville, Ky.	6	62	69	48.81	49.57	.2747	.2872
Lynn, Mass.	3	38	35	48.00	48.00	.3155	.3181
Manchester, N. H.	4	21	20	48.00	48.00	.2548	.2485
Memphis, Tenn.	4	43	55	45.58	45.16	.2837	.3000
Milwaukee, Wis.	6	106	80	48.00	48.00	.2797	.3003
Minneapolis, Minn.	8	212	154	52.56	52.09	.2547	.2738
Montgomery, Ala.	2	65	39	60.00	60.00	.1262	.1269
Nashville, Tenn.	5	90	67	54.89	54.37	.1678	.1687
Newark, N. J.	3	168	76	44.00	44.00	.3500	.3500
New Haven, Conn.	3	82	86	48.00	48.00	.2818	.2804
New Orleans, La.	2	10	19	48.00	48.00	.2750	.3250
New York, N. Y.(a)	12	1,006	774	44.00	44.00	.3790	.3809
Norfolk, Va.	5	45	44	48.00	48.00	.2764	.2855
Oakland, Cal.	2	21	24	44.00	44.00	.5774	.5729
Omaha, Nebr.	3	17	20	44.00	44.00	.2882	.2875
Peoria, Ill.	5	87	97	48.00	48.00	.3005	.2985
Philadelphia, Pa.	8	111	113	46.88	46.83	.3083	.3135
Pittsburg, Pa.(b)	3	56	56	48.00	48.00	.3313	.3375
Portland, Me.	4	65	71	48.00	48.00	.2673	.2935
Portland, Oreg.	5	41	37	48.00	46.92	.3781	.4206
Providence, R. I.	3	27	27	47.41	44.00	.2323	.2639
Racine, Wis.	2	34	49	48.00	48.00	.3000	.3037
Reading, Pa.	2	18	14	51.17	51.29	.2652	.2715
Richmond, Va.	6	165	128	49.02	49.27	.2333	.2287
Rochester, N. Y.	3	110	138	48.00	48.00	.2384	.2591
St. Louis, Mo.	9	116	131	44.35	44.29	.4395	.4534
Salt Lake City, Utah.	5	43	50	44.93	44.00	.3924	.3994
San Antonio, Tex.	3	40	36	48.00	48.00	.1991	.2113
San Francisco, Cal.	6	195	189	44.00	44.00	.5269	.5188
Scranton, Pa.	3	80	94	48.79	48.96	.2168	.2212
Seattle, Wash.	4	48	45	44.00	44.00	.4102	.5250
Sioux Falls, S. Dak.	2	9	8	56.00	56.25	.2376	.2396
Springfield, Ill.	2	14	12	48.00	48.00	.2768	.3125
Syracuse, N. Y.	2	21	20	51.71	48.00	.2562	.2565
Tacoma, Wash.	5	15	18	46.93	44.00	.4625	.5069
Tampa, Fla.	2	42	31	48.00	48.00	.2097	.2167
Terre Haute, Ind.	6	71	80	48.00	48.00	.3033	.3047
Toledo, Ohio.	4	66	60	50.14	50.35	.2741	.2733
Topeka, Kans.	3	10	15	48.00	48.00	.2375	.2500
Trenton, N. J.	3	27	37	44.00	44.00	.3707	.3651
Washington, D. C.	3	60	35	47.60	48.00	.2813	.2813
Wheeling, W. Va.	3	43	33	48.00	48.00	.2942	.3038
Wilkes-Barre, Pa.	4	61	59	48.00	48.00	.2775	.2767
Williamsport, Pa.	2	9	11	48.00	48.00	.2604	.3125
Wilmington, Del.	5	57	59	47.16	46.92	.2851	.2733
Worcester, Mass.	2	8	35	49.50	48.00	.2735	.2840

INSIDE WIREMEN, Male.

Albany, N. Y.	2	14	20	51.42	51.00	$0.3353	$0.3389
Atlanta, Ga.	2	37	36	53.76	53.56	.2780	.2909
Baltimore, Md.	4	68	62	48.00	48.00	.4331	.4333
Birmingham, Ala.	2	18	18	49.00	51.00	.3922	.4118
Boston, Mass.	2	37	33	48.00	48.00	.4500	.4500
Buffalo, N. Y.	2	47	41	48.00	48.00	.3790	.3819
Charleston, S. C.	2	12	13	54.00	54.00	.3349	.3347
Chicago, Ill.	3	63	69	44.00	44.00	.5625	.6250
Cincinnati, Ohio.	3	58	58	48.00	48.00	.3856	.3912
Cleveland, Ohio.	2	22	21	48.00	48.00	.4500	.4810
Detroit, Mich.	2	11	14	48.00	48.00	.3384	.3482
Duluth, Minn.	2	17	27	48.00	48.00	.4100	.4632
Grand Rapids, Mich.	2	28	21	54.00	54.00	.2927	.3076
Indianapolis, Ind.	2	67	70	48.00	48.00	.3366	.3507
Louisville, Ky.	2	20	12	54.00	48.00	.2597	.3438
Milwaukee, Wis.	3	27	28	52.41	52.04	.2867	.3123
Minneapolis, Minn.	2	17	26	52.24	52.38	.2978	.2903

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Continued.

INSIDE WIREMEN, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Montgomery, Ala	2	10	11	57.00	56.73	$0.2986	$0.3018
New Orleans, La	2	20	17	48.00	48.00	.3980	.3993
New York, N. Y.(a)	4	204	193	44.00	44.00	.5025	.5032
Philadelphia, Pa	5	102	119	46.90	46.99	.3814	.4006
Portland, Me	2	13	15	54.00	48.80	.2482	.2734
Portland, Oreg	2	20	20	48.00	48.00	.4000	.4063
Richmond, Va	2	18	15	54.00	54.00	.2917	.2876
St. Louis, Mo	2	20	23	44.00	44.00	.5625	.5625
Wilmington, Del	2	41	39	55.46	54.00	.2861	.2895

LABORERS, Male.

Albany, N. Y	2	33	24	53.67	50.00	$0.1887	$0.1967
Atlanta, Ga	4	279	159	59.04	59.79	.1288	.1329
Augusta, Ga	3	167	72	55.37	55.92	.1067	.1084
Baltimore, Md	4	155	149	53.66	53.30	.1802	.1847
Birmingham, Ala	4	218	273	57.66	57.43	.1474	.1539
Boston, Mass	5	404	387	53.37	53.17	.1886	.1936
Buffalo, N. Y	2	149	149	51.79	51.79	.1972	.2006
Butte, Mont	2	33	16	48.00	48.00	.3750	.4375
Charleston, S. C	2	21	24	53.71	53.00	.1316	.1380
Chicago, Ill	3	399	295	50.90	49.15	.2939	.3109
Cincinnati, Ohio	5	213	205	52.90	52.05	.2019	.2039
Cleveland, Ohio	6	246	332	57.02	57.58	.1972	.1948
Dallas, Tex	2	16	75	52.50	50.88	.2040	.2157
Denver, Colo	2	22	39	51.27	52.97	.2428	.2635
Des Moines, Iowa	2	75	97	52.24	51.71	.2107	.2322
Detroit, Mich	4	215	162	55.59	55.70	.1792	.1951
Dubuque, Iowa	2	66	45	57.64	57.00	.2129	.2484
Fall River, Mass	2	76	81	54.00	54.00	.1769	.1790
Indianapolis, Ind	3	99	107	59.84	59.91	.1755	.1972
Jacksonville, Fla	3	76	72	48.00	48.00	.1563	.1801
Jersey City, N. J	2	62	125	56.58	57.80	.2103	.1914
Kansas City, Mo	2	43	46	56.37	56.87	.2057	.2049
Los Angeles, Cal	2	221	158	48.00	48.00	.2783	.2801
Manchester, N. H	2	85	72	54.00	54.00	.1667	.1667
Memphis, Tenn	3	22	16	56.73	56.00	.1818	.1766
Milwaukee, Wis	3	83	115	59.57	58.96	.2012	.1996
Minneapolis, Minn	4	212	233	54.00	54.00	.2224	.2231
Mobile, Ala	2	53	119	54.00	54.00	.1633	.1703
Montgomery, Ala	5	109	89	57.91	57.37	.1368	.1397
New Orleans, La	6	74	86	48.81	49.15	.2144	.2163
New York, N. Y.(a)	4	213	201	50.38	48.98	.2097	.2201
Norfolk, Va	2	32	28	48.00	48.00	.1875	.1875
Omaha, Nebr	3	59	66	49.22	49.27	.2487	.2485
Peoria, Ill	3	50	24	48.96	50.00	.1946	.2074
Philadelphia, Pa	5	409	450	58.08	58.40	.1790	.1800
Pittsburg, Pa.(b)	2	303	303	59.01	51.09	.1786	.2281
Portland, Oreg	2	25	30	52.32	53.60	.2700	.2759
Providence, R. I	2	50	84	48.00	48.00	.2133	.2260
Rochester, N. Y	3	92	122	48.00	48.00	.2304	.2502
St. Paul, Minn	5	351	608	59.97	59.97	.2183	.2165
San Antonio, Tex	2	19	19	48.00	48.00	.1875	.1905
Scranton, Pa	4	127	81	59.67	56.59	.1523	.1548
Seattle, Wash	3	22	33	46.36	46.79	.3125	.3125
Sioux Falls, S. Dak	3	39	30	59.38	59.20	.2311	.2304
Tacoma, Wash	3	18	17	48.00	44.00	.3125	.3125
Terre Haute, Ind	3	47	47	54.00	54.00	.1823	.1795
Toledo, Ohio	2	44	261	59.45	59.91	.2017	.1897
Topeka, Kans	2	17	16	48.00	48.00	.2188	.2188
Trenton, N. J	3	33	31	56.36	57.48	.1601	.1691
Washington, D. C	4	76	55	48.00	48.00	.2087	.2157
Wheeling, W. Va	2	30	25	53.80	53.72	.1901	.1943
Wilkes-Barre, Pa	5	101	85	52.81	52.38	.1895	.1852
Williamsport, Pa	3	21	15	52.86	48.80	.1715	.1954
Wilmington, Del	3	56	65	53.14	53.17	.1670	.1670
Worcester, Mass	2	155	142	54.00	54.00	.1944	.1944

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Continued.

PAINTERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Albany, N. Y.	2	58	55	48.00	48.00	$0.3318	$0.3338
Atlanta, Ga.	2	22	24	54.59	54.46	.2749	.2909
Augusta, Ga.	2	26	16	57.08	54.00	.2201	.2344
Baltimore, Md.	3	114	108	48.00	48.00	.3750	.3750
Birmingham, Ala.	2	32	45	48.00	48.00	.3563	.3728
Boston, Mass.	7	148	150	48.00	48.00	.3750	.3826
Buffalo, N. Y.	4	160	161	48.00	48.00	.3750	.3750
Butte, Mont.	3	37	25	48.00	48.00	.5777	.6875
Charleston, S. C.	4	37	47	54.00	53.85	.2072	.2140
Chicago, Ill.	4	243	229	44.00	44.00	.4811	.5000
Cincinnati, Ohio.	4	86	93	48.00	48.00	.3750	.4000
Cleveland, Ohio.	4	100	106	48.00	48.00	.3845	.3842
Dallas, Tex.	2	20	15	48.00	48.00	.3750	.3750
Denver, Colo.	3	24	28	44.00	44.00	.4505	.4509
Des Moines, Iowa.	2	53	54	48.00	48.00	.3469	.3476
Detroit, Mich.	6	214	217	48.00	48.00	.3417	.3453
Dubuque, Iowa.	2	31	29	48.00	48.00	.3428	.3836
Duluth, Minn.	2	32	37	48.00	48.00	.3805	.4324
Fall River, Mass.	2	28	24	48.00	48.00	.3025	.3334
Grand Rapids, Mich.	2	21	15	54.00	54.00	.2632	.2685
Harrisburg, Pa.	2	12	14	53.33	53.43	.2720	.2748
Indianapolis, Ind.	4	90	100	48.00	48.00	.3586	.3540
Jacksonville, Fla.	6	76	73	48.00	48.00	.3129	.3232
Jersey City, N. J.	3	62	45	44.00	44.00	.4375	.4375
Kansas City, Mo.	2	32	37	48.00	48.00	.4000	.4000
Little Rock, Ark.	2	20	16	48.00	48.00	.3125	.3711
Los Angeles, Cal.	3	33	17	48.00	48.00	.4223	.4154
Louisville, Ky.	3	67	59	48.00	48.00	.3496	.3363
Lynn, Mass.	2	32	28	48.00	48.00	.3800	.3800
Manchester, N. H.	2	44	42	54.00	54.00	.2279	.2368
Memphis, Tenn.	2	25	32	48.00	48.00	.3910	.4000
Milwaukee, Wis.	3	106	96	48.00	48.00	.3165	.3367
Minneapolis, Minn.	4	120	127	48.00	48.00	.4013	.4193
Montgomery, Ala.	3	24	25	54.00	54.00	.2778	.2945
Nashville, Tenn.	2	37	40	54.00	54.00	.2849	.3000
Newark, N. J.	4	98	91	44.00	44.00	.4087	.4179
New Haven, Conn.	2	61	56	48.00	48.00	.3648	.3516
New Orleans, La.	4	110	140	48.00	48.00	.3595	.3750
New York, N. Y.(a)	7	220	220	44.10	44.10	.4695	.4901
Norfolk, Va.	3	15	15	48.00	48.00	.3750	.3750
Oakland, Cal.	2	49	67	44.00	44.00	.5625	.5625
Omaha, Nebr.	2	27	24	44.00	44.00	.4185	.4188
Peoria, Ill.	2	35	29	48.00	48.00	.3534	.3778
Philadelphia, Pa.	5	280	267	48.00	46.23	.3750	.4000
Pittsburg, Pa.(b)	2	44	40	48.00	48.00	.4250	.4250
Portland, Me.	2	45	45	54.00	52.00	.2549	.2924
Portland, Oreg.	2	38	34	48.00	48.00	.3809	.3897
Providence, R. I.	3	93	95	45.12	44.97	.3423	.3479
Racine, Wis.	2	19	14	48.00	48.00	.3421	.3821
Reading, Pa.	2	23	22	54.00	54.00	.2500	.2767
Richmond, Va.	2	33	37	54.00	54.00	.2640	.2740
Rochester, N. Y.	2	63	64	48.10	48.09	.3258	.3422
St. Louis, Mo.	3	94	97	44.00	44.00	.5005	.5394
St. Paul, Minn.	2	48	38	48.00	48.00	.3698	.4000
Salt Lake City, Utah.	2	27	40	44.00	44.00	.5000	.5000
San Antonio, Tex.	2	30	28	48.00	48.00	.3313	.3337
San Francisco, Cal.	4	113	99	44.00	44.00	.5642	.5625
Scranton, Pa.	2	18	22	48.00	48.00	.3403	.3864
Seattle, Wash.	4	42	41	44.00	44.00	.5000	.5625
Sioux Falls, S. Dak.	2	22	24	58.36	58.25	.3235	.3275
Syracuse, N. Y.	2	21	22	48.00	48.00	.3765	.3764
Tacoma, Wash.	2	23	22	48.00	48.00	.4416	.5028
Terre Haute, Ind.	6	58	48	52.76	52.75	.3121	.3177
Toledo, Ohio.	2	27	14	48.00	48.00	.3449	.3500
Topeka, Kans.	2	27	32	48.00	48.00	.3407	.3359
Washington, D. C.	3	82	72	48.00	48.00	.4375	.4375
Wheeling, W. Va.	2	44	46	48.00	48.00	.4035	.4297
Wilkes-Barre, Pa.	3	56	56	50.57	48.00	.3257	.3354
Wilmington, Del.	3	74	77	48.00	48.00	.3530	.4015
Worcester, Mass.	2	69	60	48.00	48.00	.3263	.3543

a Greater New York.

b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Continued.

PLASTERERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Albany, N Y	2	9	9	48.00	48.00	$0.5000	$0.6000
Atlanta, Ga	2	25	18	54.00	53.00	.4400	.4500
Augusta, Ga	2	7	19	54.00	54.00	.4000	.4026
Baltimore, Md	3	99	110	48.00	48.00	.6250	.6250
Birmingham, Ala	3	18	15	46.22	44.80	.5382	.5533
Boston, Mass	2	89	83	44.00	44.00	.5511	.6000
Buffalo, N. Y	3	21	21	48.00	48.00	.5000	.5000
Butte, Mont	3	36	20	44.00	44.00	.8750	1.0000
Charleston, S. C	3	16	16	53.75	53.00	.3866	.3919
Chicago, Ill	3	155	197	44.00	44.00	.6875	.6875
Cincinnati, Ohio	3	73	82	44.51	44.50	.6250	.6250
Cleveland, Ohio	2	43	58	44.00	44.00	.5625	.5625
Dallas, Tex	2	13	9	48.00	48.00	.7500	.7500
Denver, Colo	2	23	29	44.00	44.00	.6658	.6875
Des Moines, Iowa	2	22	32	48.00	48.00	.5625	.5762
Detroit, Mich	3	37	35	45.62	45.26	.5550	.5649
Dubuque, Iowa	2	16	12	48.00	48.00	.5000	.5625
Fall River, Mass	2	4	4	48.00	48.00	.5000	.5250
Grand Rapids, Mich	2	12	13	48.00	48.00	.5000	.5048
Indianapolis, Ind	2	27	16	46.33	46.50	.5241	.5500
Jacksonville, Fla	3	19	19	48.00	48.00	.5000	.5000
Jersey City, N. J	3	29	26	44.00	44.00	.5938	.6500
Kansas City, Mo	2	30	35	44.00	44.00	.6875	.6875
Los Angeles, Cal	2	37	33	48.00	48.00	.6537	.6534
Louisville, Ky	2	19	17	44.00	44.00	.6250	.6250
Lynn, Mass	2	8	8	48.00	48.00	.5500	.5500
Manchester, N. H	2	8	10	48.00	48.00	.4102	.4094
Memphis, Tenn	2	17	16	48.00	48.00	.6250	.6250
Milwaukee, Wis	2	24	16	48.00	48.00	.5000	.5625
Minneapolis, Minn	6	65	63	49.29	48.95	.5508	.6067
Montgomery, Ala	3	26	28	54.00	54.00	.4500	.5036
Nashville, Tenn	2	23	21	57.13	56.57	.3370	.3389
New Orleans, La	2	21	44	48.00	48.00	.4786	.5170
New York, N. Y.(a)	4	332	327	44.00	44.00	.6875	.6875
Norfolk, Va	3	30	28	48.00	48.00	.6250	.6875
Omaha, Nebr	2	11	28	44.00	44.00	.6250	.6250
Peoria, Ill	2	21	13	48.00	48.00	.5625	.6250
Philadelphia, Pa	3	83	97	44.00	44.00	.5625	.5938
Pittsburg, Pa.(b)	2	49	49	48.00	48.00	.5625	.5625
Portland, Me	2	23	24	48.00	48.00	.4375	.4792
Portland, Oreg	2	20	24	48.00	48.00	.6875	.7500
Providence, R. I	2	6	6	44.67	44.00	.5000	.5083
Richmond, Va	2	37	33	54.00	54.00	.3093	.3106
St. Louis, Mo	3	34	47	44.00	44.00	.7500	.7500
St. Paul, Minn	2	15	19	48.00	48.00	.5525	.5526
Salt Lake City, Utah	2	15	24	48.00	44.00	.6250	.7500
San Antonio, Tex	2	13	13	48.00	48.00	.7500	.7500
San Francisco, Cal	2	40	40	44.00	44.00	.8750	.8750
Scranton, Pa	3	34	26	48.00	48.00	.4353	.5038
Seattle, Wash	2	37	47	44.00	44.00	.7382	.8125
Sioux Falls, S. Dak	2	13	12	56.31	56.50	.4269	.4313
Syracuse, N. Y	2	7	8	48.00	48.00	.5500	.5500
Tacoma, Wash	2	19	22	48.00	44.00	.6875	.7500
Terre Haute, Ind	3	21	16	50.00	50.25	.5333	.5313
Toledo, Ohio	2	29	26	48.00	48.00	.5000	.5000
Topeka, Kans	2	10	14	48.00	48.00	.5625	.5625
Trenton, N. J	3	21	23	44.00	44.00	.5810	.6000
Washington, D. C	3	77	90	48.00	48.00	.6250	.6250
Wheeling, W. Va	2	14	14	47.36	47.43	.5068	.5000
Wilkes-Barre, Pa	2	35	32	48.00	48.00	.4484	.4570
Wilmington, Del	2	30	39	48.00	48.00	.5000	.5000
Worcester, Mass	2	21	22	48.00	48.00	.5167	.5182

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Continued.

PLUMBERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Albany, N. Y.	2	15	14	48.00	48.00	$0.5000	$0.5000
Atlanta, Ga.	3	20	23	53.00	53.00	.4245	.4228
Baltimore, Md.	3	50	43	48.00	48.00	.4094	.4106
Birmingham, Ala.	2	24	30	47.00	47.00	.5745	.6383
Boston, Mass.	5	37	38	48.00	47.47	.4761	.5262
Buffalo, N. Y.	3	22	22	48.00	48.00	.4375	.4375
Butte, Mont.	2	19	17	44.00	44.00	.8750	.8750
Charleston, S. C.	3	12	12	54.00	54.00	.3650	.3804
Chicago, Ill.	4	173	153	44.00	44.00	.5625	.6250
Cincinnati, Ohio	5	75	83	48.00	46.65	.5000	.5154
Cleveland, Ohio	3	51	51	48.00	48.00	.5625	.5625
Dallas, Tex.	3	22	20	48.00	48.00	.6051	.6188
Davenport, Iowa	3	16	11	48.00	48.00	.4258	.4261
Denver, Colo.	2	16	19	44.00	44.00	.6250	.6250
Des Moines, Iowa	3	24	17	48.00	48.00	.4792	.5129
Detroit, Mich.	5	41	47	48.00	48.00	.4010	.4071
Dubuque, Iowa	2	9	6	48.00	48.00	.5000	.5000
Duluth, Minn.	3	24	22	45.00	44.73	.5563	.6335
Fall River, Mass.	2	14	13	54.00	54.00	.3611	.3611
Grand Rapids, Mich.	2	10	8	48.00	48.00	.4300	.4344
Indianapolis, Ind.	3	17	18	47.00	47.00	.4750	.5000
Jacksonville, Fla.	3	12	15	48.00	48.00	.5104	.5625
Jersey City, N. J.	4	18	24	44.00	44.00	.5000	.5391
Kansas City, Mo.	3	25	28	48.00	48.00	.5625	.6138
Little Rock, Ark.	2	11	14	48.00	48.00	.5256	.5625
Los Angeles, Cal.	2	21	24	46.67	46.33	.6250	.5885
Louisville, Ky.	3	18	17	48.00	48.00	.4375	.5000
Lynn, Mass.	4	14	15	48.00	48.00	.4599	.4833
Manchester, N. H.	2	21	26	48.00	48.00	.3470	.3452
Memphis, Tenn.	2	18	20	48.00	48.00	.4479	.4797
Milwaukee, Wis.	4	42	40	44.38	44.20	.5000	.5375
Minneapolis, Minn.	4	43	28	48.00	48.00	.4724	.5089
Mobile, Ala.	2	12	13	48.00	48.00	.5000	.5000
Montgomery, Ala.	2	15	18	48.00	48.00	.5000	.5625
Nashville, Tenn.	3	20	24	47.60	47.67	.4605	.4567
Newark, N. J.	2	13	12	48.00	44.00	.5000	.5563
New Haven, Conn.	2	7	10	48.00	48.00	.4375	.4375
New Orleans, La.	6	63	74	48.00	48.00	.4940	.5152
New York, N. Y.(a)	10	391	349	44.00	44.00	.5945	.6258
Norfolk, Va.	3	46	42	48.00	48.00	.6114	.6250
Omaha, Nebr.	2	14	23	48.00	45.57	.5625	.6250
Peoria, Ill.	2	10	9	48.00	48.00	.4813	.5313
Philadelphia, Pa.	6	77	75	47.74	47.73	.4375	.4375
Pittsburg, Pa.(b)	4	20	17	48.00	48.00	.5000	.5000
Portland, Me.	2	5	5	50.40	47.40	.3208	.3375
Portland, Oreg.	2	16	18	48.00	48.00	.6250	.7500
Providence, R. I.	3	32	32	44.00	44.00	.4412	.4822
Racine, Wis.	2	8	7	44.00	44.00	.5000	.5000
Reading, Pa.	2	23	25	54.00	54.00	.3012	.3200
Richmond, Va.	4	21	17	48.00	48.00	.3988	.4063
Rochester, N. Y.	2	28	28	48.00	48.00	.4041	.4253
St. Louis, Mo.	3	30	27	44.00	44.00	.6250	.6400
St. Paul, Minn.	2	12	11	48.00	48.00	.5625	.5625
Salt Lake City, Utah.	2	12	7	44.00	44.00	.5497	.5768
San Antonio, Tex.	2	13	13	48.00	48.00	.4471	.5048
San Francisco, Cal.	5	143	96	44.00	44.00	.7998	.8229
Scranton, Pa.	2	12	13	48.00	48.00	.4037	.4544
Seattle, Wash.	3	33	60	44.00	44.00	.6875	.8125
Sioux Falls, S. Dak.	2	13	12	59.62	59.58	.3327	.3440
Springfield, Ill.	2	10	11	48.00	48.00	.5000	.5000
Syracuse, N. Y.	2	13	13	48.00	48.00	.4375	.5000
Tacoma, Wash.	2	15	15	44.00	44.00	.6250	.7375
Tampa, Fla.	4	19	19	48.00	48.00	.5691	.6184
Terre Haute, Ind.	2	12	10	54.00	48.00	.4000	.4300
Toledo, Ohio.	3	17	21	44.00	44.00	.4890	.5000
Topeka, Kans.	2	10	10	52.20	52.20	.3644	.3644
Trenton, N. J.	2	15	12	44.00	44.00	.4324	.5000
Troy, N. Y.	2	11	11	48.00	48.00	.3750	.4500
Washington, D. C.	2	27	39	48.00	48.00	.5000	.5000
Wheeling, W. Va.	2	11	10	48.00	48.00	.4688	.4688
Wilkes-Barre, Pa.	3	17	20	48.00	48.00	.3383	.3344
Wilmington, Del.	3	18	17	48.00	48.00	.3791	.3987
Worcester, Mass.	2	17	16	48.00	48.00	.4688	.5000

a Greater New York.

b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

BUILDING TRADES—Concluded.

ROOFERS, TIN, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Atlanta, Ga.	2	31	28	53.00	53.00	$0.3049	$0.3073
Baltimore, Md.	3	39	34	48.00	48.00	.3638	.3649
Boston, Mass.	3	8	8	48.00	48.00	.3586	.3782
Buffalo, N. Y.	2	24	26	48.00	48.00	.3563	.3596
Charleston, S. C.	4	13	16	55.38	55.13	.2483	.2556
Cincinnati, Ohio.	3	31	28	48.00	48.00	.3322	.3380
Cleveland, Ohio.	4	41	79	48.15	48.10	.3145	.3188
Des Moines, Iowa.	2	9	10	48.00	48.00	.3417	.3619
Detroit, Mich.	4	31	30	53.39	53.50	.2965	.2911
Dubuque, Iowa.	2	22	15	58.32	58.00	.2667	.2686
Fall River, Mass.	2	6	5	54.00	54.00	.2778	.2778
Indianapolis, Ind.	3	35	30	48.00	48.00	.3636	.3950
Jacksonville, Fla.	4	30	35	50.40	48.00	.3351	.3447
Jersey City, N. J.	3	23	23	44.00	44.00	.5543	.5625
Louisville, Ky.	2	22	22	54.00	54.00	.2778	.2778
Lynn, Mass.	2	3	3	48.00	48.00	.4063	.4375
Memphis, Tenn.	3	32	34	48.00	48.00	.4375	.4384
Milwaukee, Wis.	2	14	13	48.00	48.00	.2973	.3548
Minneapolis, Minn.	2	6	7	47.17	47.14	.4000	.4036
Montgomery, Ala.	3	19	17	48.95	49.06	.3895	.4114
Newark, N. J.	2	6	4	48.00	44.00	.5000	.5563
New Orleans, La.	2	22	22	48.45	48.45	.3182	.3525
New York, N. Y. (a)	5	55	61	44.00	44.00	.5625	.5625
Norfolk, Va.	2	12	11	48.00	48.00	.3385	.3409
Philadelphia, Pa.	3	71	81	48.00	48.00	.3743	.3765
Pittsburg, Pa. (b)	2	15	14	48.00	48.00	.4452	.4716
Providence, R. I.	2	5	5	48.00	48.00	.3245	.3245
Richmond, Va.	4	12	9	48.00	48.00	.3872	.3912
St. Louis, Mo.	2	16	17	52.38	52.24	.4378	.4703
Scranton, Pa.	2	13	18	48.00	48.00	.3399	.3976
Terre Haute, Ind.	4	25	30	54.00	54.00	.3333	.3750
Trenton, N. J.	2	17	17	44.00	44.00	.4547	.5000
Wilkes-Barre, Pa.	3	10	9	48.00	48.00	.3125	.3195
Wilmington, Del.	2	8	7	49.50	49.43	.3333	.3440

CLOTHING, FACTORY PRODUCT.

CUTTERS, HAND, Male.

Baltimore, Md.	2	78	73	53.77	53.62	$0.3192	$0.3203
Boston, Mass.	2	27	24	49.67	50.25	.3461	.3500
Buffalo, N. Y.	4	54	54	51.00	51.00	.3936	.3958
Chicago, Ill.	3	147	141	48.00	48.00	.4426	.4761
Cincinnati, Ohio.	3	64	64	48.00	48.00	.3960	.3960
Louisville, Ky.	2	13	13	57.15	57.15	.2158	.2293
New York, N. Y. (a)	4	179	157	50.41	51.21	.4012	.4127
Philadelphia, Pa.	3	111	113	54.00	53.95	.3507	.3492
Rochester, N. Y.	2	113	120	54.00	54.00	.3220	.3249

CUTTERS, MACHINE, Male.

Baltimore, Md.	2	34	32	53.88	53.88	$0.3738	$0.3928
Buffalo, N. Y.	4	5	5	51.00	51.00	.4118	.4157
Chicago, Ill.	3	159	202	48.00	48.00	.4403	.4283
Cincinnati, Ohio.	3	5	5	48.00	48.00	.4167	.4167
New York, N. Y. (a)	4	15	12	48.33	48.42	.4394	.4485
Philadelphia, Pa.	2	4	5	54.00	53.80	.4259	.4384

FINISHERS, Female.

Baltimore, Md.	3	227	179	57.92	56.56	$0.1191	$0.1335
Buffalo, N. Y.	3	33	30	54.00	54.00	.1141	.1361
Chicago, Ill.	3	143	166	54.00	54.00	.1537	.1539
Cincinnati, Ohio.	2	126	115	54.00	54.00	.1148	.1168
Louisville, Ky.	2	69	114	55.72	55.96	.1080	.1062
New York, N. Y. (a)	4	148	133	56.24	56.25	.1028	.1043
Philadelphia, Pa.	2	62	76	54.00	53.82	.1156	.1354
Rochester, N. Y.	2	51	86	54.00	54.00	.1568	.1631

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

CLOTHING, FACTORY PRODUCT—Concluded.

SEWING-MACHINE OPERATORS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Baltimore, Md	3	122	125	58.87	55.94	$0.2564	$0.2326
Boston, Mass	2	50	53	49.14	49.75	.2784	.2761
Buffalo, N. Y	3	20	20	54.00	54.00	.2757	.2692
Chicago, Ill	4	56	76	54.02	54.03	.3103	.3161
Louisville, Ky	2	10	12	57.50	56.75	.2791	.2809
New York, N. Y. (a)	5	289	274	56.85	57.34	.2082	.2109
Philadelphia, Pa	2	229	230	54.00	54.00	.2131	.2193
Rochester, N. Y	2	27	40	54.00	54.00	.2289	.2532

SEWING-MACHINE OPERATORS, Female.

Baltimore, Md	2	86	60	58.88	59.07	$0.1287	$0.1408
Boston, Mass	2	69	59	52.57	52.47	.1871	.1743
Buffalo, N. Y	3	26	27	53.08	53.11	.1277	.1371
Chicago, Ill	4	153	170	54.14	54.12	.2098	.2004
Cincinnati, Ohio	2	62	60	54.00	54.00	.1548	.1546
Louisville, Ky	2	165	169	55.32	55.37	.1547	.1404
Philadelphia, Pa	3	436	455	54.00	53.88	.1221	.1268
Rochester, N. Y	2	103	99	54.00	54.00	.1487	.1614

FOUNDRY AND MACHINE SHOP.

BLACKSMITHS, Male.

Atlanta, Ga	3	3	3	59.67	59.67	$0.3436	$0.3521
Baltimore, Md	4	18	18	54.00	54.00	.2729	.2883
Birmingham, Ala	2	4	5	59.50	59.40	.3500	.3800
Boston, Mass	5	10	10	55.00	55.00	.2724	.2884
Bridgeport, Conn	2	3	4	57.33	56.50	.3415	.3256
Buffalo, N. Y	2	6	6	58.00	58.00	.2795	.2817
Butte, Mont	2	5	3	48.00	48.00	.5625	.6250
Charleston, S. C	2	4	3	54.00	54.00	.3264	.3796
Chicago, Ill	5	28	22	51.93	52.18	.3554	.3566
Cincinnati, Ohio	4	5	5	54.80	54.80	.3093	.3129
Cleveland, Ohio	3	38	35	55.18	55.17	.3252	.3172
Dallas, Tex	2	5	5	54.00	54.00	.3333	.3444
Davenport, Iowa	2	12	15	59.00	59.00	.3263	.3337
Denver, Colo	2	15	10	55.53	53.50	.3313	.3520
Des Moines, Iowa	2	5	2	54.00	54.00	.3722	.3556
Detroit, Mich	3	16	21	59.25	59.33	.2469	.2507
Dubuque, Iowa	3	3	4	59.67	59.75	.2611	.2771
Duluth, Minn	2	9	7	57.89	57.57	.3364	.3436
Evansville, Ind	4	29	25	59.79	59.76	.2940	.2793
Fort Wayne, Ind	3	23	21	59.52	59.29	.2661	.2921
Grand Rapids, Mich	2	8	5	59.00	59.00	.2425	.2680
Hoboken, N. J	2	17	14	53.35	53.43	.3702	.3716
Indianapolis, Ind	3	18	22	51.83	51.55	.2808	.2593
Jersey City, N. J	2	9	9	53.00	53.00	.4270	.4327
Los Angeles, Cal	2	10	9	58.50	57.89	.3448	.3436
Louisville, Ky	4	9	14	59.67	59.86	.2750	.2714
Memphis, Tenn	3	5	5	56.40	56.40	.3715	.3997
Milwaukee, Wis	4	43	35	55.09	55.11	.3042	.3147
Minneapolis, Minn	2	13	15	55.00	55.00	.2869	.3006
Mobile, Ala	2	6	5	54.00	54.00	.3889	.4000
Nashville, Tenn	2	2	2	54.00	54.00	.3473	.3473
New Orleans, La	4	12	6	54.00	54.00	.3595	.4028
New York, N. Y. (a)	7	27	28	53.81	53.86	.3997	.4066
Norfolk, Va	3	4	4	54.00	54.00	.3125	.3195
Omaha, Nebr	2	4	3	57.00	56.00	.3238	.3400
Philadelphia, Pa	7	23	23	56.39	56.30	.2971	.3016
Pittsburg, Pa. (b)	5	66	63	60.91	60.67	.2859	.2960
Portland, Me	2	25	24	59.00	59.00	.2531	.2566
Portland, Oreg	2	4	3	54.00	54.00	.4190	.4537
Providence, R. I	6	20	16	57.60	55.56	.2957	.3190
Richmond, Va	3	15	13	57.73	57.92	.2806	.2771
Rochester, N. Y	4	4	7	54.00	54.00	.3160	.3206
St. Louis, Mo	4	11	10	54.00	54.00	.3444	.3630

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

FOUNDRY AND MACHINE SHOP—Continued.

BLACKSMITHS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
St. Paul, Minn	4	14	11	59.14	55.73	$0.2796	$0.3082
Salt Lake City, Utah	2	10	7	53.20	53.29	.3250	.4103
San Antonio, Tex	2	2	4	54.00	54.00	.3519	.4236
San Francisco, Cal	3	21	21	54.00	54.00	.4378	.4643
Scranton, Pa	2	11	9	55.00	55.00	.2623	.2889
Seattle, Wash	2	9	7	54.00	54.00	.3672	.3968
Terre Haute, Ind	2	5	5	54.00	54.00	.3000	.3000
Toledo, Ohio	2	6	4	58.17	57.75	.3075	.3275
Troy, N. Y	3	3	3	59.33	59.33	.2768	.2935
Washington, D. C	2	6	6	51.33	51.33	.3221	.3326
Williamsport, Pa	2	5	4	59.80	58.50	.2585	.2669
Wilmington, Del	2	7	7	54.00	54.00	.2639	.2668
Worcester, Mass	3	6	6	57.17	56.67	.3100	.3250
BOILER MAKERS, Male.							
Baltimore, Md	3	41	44	54.00	54.00	$0.2953	$0.3083
Boston, Mass	2	47	49	54.00	54.00	.3002	.3173
Bridgeport, Conn	2	21	18	59.00	55.89	.2603	.2565
Charleston, S. C	2	6	9	54.00	54.00	.3333	.3271
Chicago, Ill	3	44	38	51.55	52.24	.3649	.3764
Denver, Colo	2	18	14	57.00	53.57	.3203	.3554
Duluth, Minn	2	31	27	54.00	54.00	.4036	.3719
Fort Wayne, Ind	3	50	47	57.76	58.23	.2828	.3001
Grand Rapids, Mich	2	9	12	59.00	59.00	.2514	.2500
Indianapolis, Ind	2	30	61	50.17	50.05	.2775	.2633
Jersey City, N. J	2	31	25	53.00	53.00	.3441	.3630
Los Angeles, Cal	2	8	9	54.00	54.00	.3688	.3844
Louisville, Ky	3	48	67	59.88	59.93	.2576	.2584
Mobile, Ala	2	12	13	54.00	54.00	.3843	.3932
New Orleans, La	2	13	17	54.00	54.00	.3932	.3905
New York, N. Y. (a)	5	67	56	53.36	53.39	.3463	.3479
Norfolk, Va	2	13	11	54.00	54.00	.3034	.3409
Philadelphia, Pa	2	9	10	56.00	55.90	.2622	.2625
Pittsburg, Pa. (b)	3	91	74	57.82	57.81	.3285	.3278
Richmond, Va	2	6	3	56.83	57.67	.2320	.2667
San Antonio, Tex	2	2	3	54.00	54.00	.3333	.3519
San Francisco, Cal	3	74	113	54.00	54.00	.4264	.4877
Scranton, Pa	2	40	27	55.00	55.00	.2095	.2776
BRASS FINISHERS, Male.							
Chicago, Ill	2	91	76	54.00	54.00	$0.3015	$0.3064
Milwaukee, Wis	3	86	100	58.01	57.75	.2346	.2309
New York, N. Y. (a)	5	194	186	53.59	53.52	.2801	.2872
Philadelphia, Pa	2	30	34	55.83	55.88	.2960	.2927
Providence, R. I	2	44	47	55.00	55.00	.2334	.2504
LABORERS, Male.							
Atlanta, Ga	3	80	64	59.78	59.81	$0.1384	$0.1352
Baltimore, Md	7	404	303	54.00	54.00	.1587	.1622
Birmingham, Ala	2	73	82	59.66	59.59	.1308	.1406
Boston, Mass	7	121	122	54.55	54.44	.1798	.1843
Buffalo, N. Y	2	91	93	59.14	59.16	.1555	.1579
Butte, Mont	2	11	15	48.00	48.00	.3750	.4375
Charleston, S. C	2	16	18	54.00	54.00	.1163	.1157
Chicago, Ill	5	1,135	1,023	54.01	54.02	.1944	.1952
Cincinnati, Ohio	3	69	74	55.49	55.51	.1606	.1689
Cleveland, Ohio	4	237	185	55.33	56.02	.1705	.1772
Davenport, Iowa	2	35	47	59.00	59.00	.1790	.1803
Denver, Colo	2	44	26	55.23	54.46	.1913	.2096
Des Moines, Iowa	2	22	23	54.00	54.00	.2136	.2142
Detroit, Mich	3	446	524	59.29	59.40	.1590	.1628
Dubuque, Iowa	2	45	39	59.73	59.49	.1475	.1528
Duluth, Minn	2	56	52	56.77	56.60	.2093	.2035

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

FOUNDRY AND MACHINE SHOP—Continued.

LABORERS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Evansville, Ind	4	28	28	58.43	58.46	$0.1610	$0.1628
Fall River, Mass	2	75	62	58.27	58.26	.1302	.1333
Fort Wayne, Ind	3	534	537	59.78	59.79	.1654	.1751
Grand Rapids, Mich	4	80	59	57.50	57.31	.1723	.1808
Hoboken, N. J	2	39	31	55.09	55.94	.1836	.1817
Indianapolis, Ind	3	316	392	54.81	53.58	.1560	.1611
Jacksonville, Fla	2	20	20	60.00	60.00	.1350	.1396
Kansas City, Mo	2	4	4	60.00	60.00	.1750	.1729
Little Rock, Ark	2	41	39	60.00	54.31	.1567	.1615
Los Angeles, Cal	2	44	124	58.55	58.76	.2136	.2012
Louisville, Ky	3	73	94	59.70	59.66	.1425	.1445
Memphis, Tenn	3	144	115	56.50	56.09	.1532	.1630
Milwaukee, Wis	6	601	889	55.63	55.55	.1634	.1703
Minneapolis, Minn	2	117	118	55.00	55.00	.1924	.1958
Mobile, Ala	2	48	39	54.00	54.00	.1615	.1752
Montgomery, Ala	3	49	40	60.00	60.00	.1192	.1242
Nashville, Tenn	2	16	16	58.88	58.88	.1313	.1297
Newark, N. J	2	115	110	54.00	54.00	.1740	.1781
New Orleans, La	4	150	68	54.00	54.00	.1828	.1940
New York, N. Y. (a)	9	122	135	54.02	54.04	.1960	.2012
Norfolk, Va	2	9	10	54.00	54.00	.1523	.1547
Omaha, Nebr	2	148	134	59.96	59.96	.1740	.1839
Philadelphia, Pa	8	497	481	56.95	56.76	.1493	.1529
Pittsburg, Pa. (b)	5	556	580	56.23	56.19	.1642	.1717
Portland, Me	2	13	11	59.00	59.00	.1503	.1595
Portland, Oreg	2	48	46	54.00	54.00	.2338	.2587
Providence, R. I	6	500	435	58.86	55.49	.1668	.1747
Richmond, Va	3	110	122	58.43	58.52	.1212	.1313
Rochester, N. Y	7	173	171	54.25	54.14	.1913	.2024
St. Louis, Mo	2	132	111	54.00	54.00	.1929	.2077
St. Paul, Minn	3	102	163	59.21	55.73	.1878	.2101
Salt Lake City, Utah	2	50	35	53.34	53.40	.2550	.2405
San Antonio, Tex	2	27	53	54.00	54.00	.1511	.1620
San Francisco, Cal	4	88	177	54.00	54.00	.2639	.2811
Scranton, Pa	2	168	178	59.17	57.30	.1454	.1486
Seattle, Wash	2	83	33	54.00	54.00	.2359	.2229
Syracuse, N. Y	2	82	78	59.35	59.31	.1668	.1793
Terre Haute, Ind	2	29	34	54.00	56.47	.1561	.1642
Toledo, Ohio	2	19	15	59.21	59.33	.1768	.1797
Troy, N. Y	5	48	50	57.44	57.16	.1881	.1911
Washington, D. C	3	45	53	51.71	51.42	.1758	.1842
Wheeling, W. Va	2	38	47	54.00	54.00	.1843	.1950
Williamsport, Pa	2	67	73	59.78	58.36	.1550	.1586
Wilmington, Del	2	197	205	54.00	54.00	.1391	.1467
Worcester, Mass	3	167	156	57.87	57.88	.1588	.1601

MACHINISTS, Male.

Atlanta, Ga	3	34	25	59.62	59.76	$0.3020	$0.3103
Baltimore, Md	6	209	197	54.00	54.00	.2913	.3061
Birmingham, Ala	2	37	42	59.76	59.76	.3089	.3214
Boston, Mass	5	72	69	54.00	54.00	.2987	.3045
Buffalo, N. Y	2	43	49	55.81	55.59	.2777	.2896
Butte, Mont	2	18	18	48.00	48.00	.5625	.5625
Charleston, S. C	2	15	15	54.00	54.00	.3034	.3034
Chicago, Ill	6	239	239	52.18	51.88	.3296	.3365
Cincinnati, Ohio	5	250	243	55.42	55.44	.2577	.2651
Cleveland, Ohio	3	186	250	54.65	54.78	.2886	.2940
Dallas, Tex	2	19	20	54.00	54.00	.3304	.3536
Davenport, Iowa	2	68	76	59.00	59.00	.3263	.3398
Denver, Colo	2	67	47	56.28	53.43	.3175	.3546
Des Moines, Iowa	2	9	7	54.00	54.00	.3074	.3460
Detroit, Mich	3	30	33	59.13	59.09	.2703	.2871
Dubuque, Iowa	3	23	25	59.30	59.24	.2533	.2820
Duluth, Minn	2	39	34	57.46	57.09	.3387	.3376
Evansville, Ind	4	37	43	57.95	58.40	.2578	.2543
Fort Wayne, Ind	3	45	56	55.33	56.34	.2827	.2854
Grand Rapids, Mich	3	35	26	59.00	59.00	.2493	.2592
Hoboken, N. J	2	149	100	53.07	53.07	.3238	.3410
Indianapolis, Ind	3	242	248	52.56	51.54	.2955	.3018

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

FOUNDRY AND MACHINE SHOP—Continued.

MACHINISTS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Jacksonville, Fla	2	15	13	60.00	60.00	$0.3150	$0.3173
Jersey City, N. J	2	34	37	53.00	53.00	.3511	.3511
Little Rock, Ark	2	16	17	60.00	55.76	.3458	.3706
Los Angeles, Cal	2	68	56	57.16	56.59	.3382	.3580
Louisville, Ky	3	38	52	59.55	59.63	.2614	.2608
Memphis, Tenn	2	24	21	54.00	54.00	.3139	.3463
Milwaukee, Wis	5	749	961	55.13	55.23	.2888	.2977
Minneapolis, Minn	2	92	131	55.00	55.00	.2925	.2951
Mobile, Ala	2	29	26	54.00	54.00	.3477	.3665
Montgomery, Ala	2	8	7	60.00	60.00	.3281	.3321
Nashville, Tenn	2	13	14	54.00	54.00	.3336	.3397
Newark, N. J	2	53	60	54.00	54.00	.3214	.3274
New Orleans, La	4	76	54	54.00	54.00	.3479	.3827
New York, N. Y.(a)	8	351	476	54.04	54.04	.3208	.3200
Norfolk, Va	3	22	23	54.00	54.00	.2917	.3393
Omaha, Nebr	2	13	12	54.00	54.00	.3469	.3704
Philadelphia, Pa	7	490	476	55.97	55.93	.2831	.2847
Pittsburg, Pa.(b)	5	411	421	58.25	58.49	.3150	.3245
Portland, Me	2	55	58	59.00	59.00	.2676	.2830
Portland, Oreg	2	44	38	54.00	54.00	.3902	.4057
Providence, R. I	5	677	574	58.56	55.38	.2570	.2898
Richmond, Va	3	45	50	56.71	56.18	.2600	.2811
Rochester, N. Y	4	269	379	54.00	54.00	.2867	.2949
St. Louis, Mo	5	239	231	54.00	54.00	.3031	.3172
St. Paul, Minn	3	41	51	59.05	55.90	.2898	.2838
Salt Lake City, Utah	2	18	52	53.39	53.23	.4080	.3822
San Antonio, Tex	2	14	17	54.00	54.00	.3425	.3480
San Francisco, Cal	4	191	218	54.00	54.00	.3908	.4059
Scranton, Pa	2	100	142	55.00	55.00	.2731	.2733
Seattle, Wash	2	83	64	54.00	54.00	.3642	.3663
Terre Haute, Ind	2	15	13	54.00	54.00	.2915	.2897
Toledo, Ohio	2	25	23	56.60	56.39	.3023	.3063
Troy, N. Y	2	33	30	59.42	59.43	.2682	.2776
Washington, D. C	4	36	35	49.61	49.49	.3345	.3406
Williamsport, Pa	2	50	54	59.04	54.22	.2507	.2539
Wilmington, Del	2	93	99	54.00	54.00	.2848	.2936
Worcester, Mass	2	236	220	57.20	57.21	.2656	.2685
MOLDERS, IRON, Male.							
Atlanta, Ga	3	29	28	59.79	59.79	$0.2959	$0.2993
Baltimore, Md	3	77	91	54.00	54.00	.3158	.3345
Birmingham, Ala	2	24	31	59.42	59.32	.3160	.3224
Boston, Mass	4	127	123	54.00	54.00	.3241	.3245
Buffalo, N. Y	2	28	25	60.00	60.00	.2936	.3050
Butte, Mont	2	15	15	48.00	48.00	.5625	.5625
Charleston, S. C	2	11	13	54.00	54.00	.2828	.2838
Chicago Ill	4	227	211	52.22	52.49	.3372	.3460
Cincinnati, Ohio	2	24	25	57.00	56.88	.3350	.3500
Cleveland, Ohio	2	104	113	58.85	58.62	.2629	.2874
Dallas, Tex	2	17	26	54.00	54.00	.3562	.3647
Denver, Colo	2	56	19	54.00	53.47	.4187	.4517
Des Moines, Iowa	2	18	14	54.00	54.00	.3086	.3258
Detroit, Mich	2	85	116	59.54	59.56	.2955	.3045
Dubuque, Iowa	2	16	24	59.56	59.63	.2679	.2708
Evansville, Ind	5	24	25	58.50	58.52	.2695	.2885
Fall River, Mass	2	76	65	58.66	58.68	.2614	.2692
Fort Wayne, Ind	2	119	117	60.00	60.00	.2623	.2702
Grand Rapids, Mich	3	46	40	54.00	54.00	.3096	.3084
Hoboken, N. J	2	32	34	54.00	54.00	.3427	.3464
Indianapolis, Ind	3	81	79	53.65	52.37	.2909	.3134
Jacksonville, Fla	2	9	10	60.00	60.00	.2778	.2725
Los Angeles, Cal	2	45	65	57.67	57.77	.3537	.3609
Louisville, Ky	2	25	36	59.76	59.78	.2820	.2797
Memphis, Tenn	2	32	25	54.00	54.00	.3333	.3611
Milwaukee, Wis	3	149	298	56.71	55.76	.3321	.3502
Minneapolis, Minn	2	36	43	54.00	54.00	.3372	.3314
Mobile, Ala	2	6	6	54.00	54.00	.3148	.3426
Montgomery, Ala	2	11	9	60.00	60.00	.3045	.3056

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

FOUNDRY AND MACHINE SHOP—Continued.

MOLDERS, IRON, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Newark, N. J.	3	146	161	54.00	54.00	$0.3302	$0.3527
New Haven, Conn.	2	68	70	57.09	56.50	.2779	.2915
New Orleans, La.	3	29	22	54.00	54.00	.3333	.3649
New York, N. Y.(a)	4	125	151	54.00	54.00	.3473	.3662
Norfolk, Va.	2	10	10	54.00	54.00	.2834	.3084
Philadelphia, Pa.	7	239	265	56.11	55.68	.3447	.3367
Pittsburg, Pa.(b)	4	188	214	55.56	55.63	.3575	.3786
Portland, Oreg.	2	28	23	54.00	54.00	.4058	.4191
Providence, R. I.	3	151	138	59.34	56.14	.3380	.3417
Richmond, Va.	2	40	26	57.58	58.00	.2423	.2524
Rochester, N. Y.	5	131	129	54.00	54.00	.3296	.3384
St. Louis, Mo.	4	125	103	54.00	54.47	.3413	.3512
St. Paul, Minn.	2	31	79	54.00	54.00	.3726	.3133
Salt Lake City, Utah	2	17	25	53.65	53.32	.4114	.3940
San Antonio, Tex.	2	7	10	54.00	54.00	.3294	.3250
San Francisco, Cal.	3	93	58	54.00	54.00	.4441	.4693
Scranton, Pa.	2	56	27	58.13	58.89	.2947	.3426
Seattle, Wash.	2	52	27	54.00	54.00	.4227	.4417
Syracuse, N. Y.	2	86	89	54.00	54.00	.3433	.3437
Terre Haute, Ind.	2	14	13	54.00	58.15	.3161	.3192
Toledo, Ohio	2	14	12	60.00	59.58	.3000	.3000
Wilmington, Del.	2	75	78	54.00	54.00	.3229	.3266
Worcester, Mass.	2	68	69	60.00	60.00	.2940	.2931

PATTERN MAKERS, WOOD, Male.

Atlanta, Ga.	3	9	7	59.67	59.71	$0.3073	$0.3159
Baltimore, Md.	4	21	27	54.00	54.00	.3276	.3444
Birmingham, Ala.	2	9	9	59.67	59.56	.3222	.3528
Boston, Mass.	4	11	13	54.00	54.00	.3455	.3449
Buffalo, N. Y.	2	5	3	55.20	56.00	.3660	.3600
Butte, Mont.	2	4	3	48.00	48.00	.5625	.6042
Charleston, S. C.	2	3	3	54.00	54.00	.3333	.3333
Chicago, Ill.	4	78	62	52.62	52.63	.4034	.4149
Cincinnati, Ohio	3	13	15	55.00	55.00	.3185	.3177
Cleveland, Ohio	2	25	18	54.56	54.67	.3216	.3239
Dallas, Tex.	2	4	7	54.00	54.00	.3472	.4024
Davenport, Iowa	2	4	5	59.00	59.00	.3175	.3290
Denver, Colo.	2	10	6	56.30	57.00	.3650	.3750
Des Moines, Iowa	2	6	5	54.00	54.00	.3389	.3289
Detroit, Mich.	2	8	12	59.38	59.42	.2975	.3100
Dubuque, Iowa	2	6	5	59.67	59.60	.2972	.3000
Duluth, Minn.	2	6	8	57.33	57.75	.3446	.3306
Evansville, Ind.	2	2	3	57.00	56.33	.2875	.2583
Fall River, Mass.	2	7	7	54.00	54.00	.2925	.3265
Fort Wayne, Ind.	3	14	17	56.43	56.18	.2821	.2935
Grand Rapids, Mich.	2	6	4	59.00	59.00	.2593	.2764
Indianapolis, Ind.	3	19	21	55.47	51.38	.3200	.3683
Jersey City, N. J.	2	4	3	53.00	53.00	.4316	.4339
Little Rock, Ark.	2	6	3	60.00	56.00	.3333	.3167
Los Angeles, Cal.	2	15	16	58.00	57.75	.3617	.3922
Louisville, Ky.	2	9	13	59.67	59.69	.2978	.2965
Memphis, Tenn.	2	7	5	54.00	54.00	.3754	.4000
Milwaukee, Wis.	4	158	134	55.06	55.10	.3372	.3290
Minneapolis, Minn.	2	13	20	55.00	55.00	.3190	.3269
Mobile, Ala.	2	5	3	54.00	54.00	.3389	.3611
Montgomery, Ala.	2	2	2	60.00	60.00	.3500	.3500
Nashville, Tenn.	2	2	2	54.00	54.00	.3217	.3217
Newark, N. J.	3	13	14	54.00	54.00	.4124	.3789
New Haven, Conn.	2	5	4	59.60	59.00	.3150	.3339
New Orleans, La.	4	14	10	54.00	54.00	.3333	.3667
New York, N. Y.(a)	6	71	66	54.01	54.03	.4100	.4294
Norfolk, Va.	2	3	2	54.00	54.00	.3334	.3473
Philadelphia, Pa.	8	64	76	56.47	56.49	.3225	.3263
Pittsburg, Pa.(b)	4	64	65	55.78	55.85	.3634	.3813
Portland, Me.	2	7	4	59.00	59.00	.3279	.3101
Portland, Oreg.	2	6	5	54.00	54.00	.4074	.4167
Providence, R. I.	4	43	45	57.40	55.71	.3258	.3363
Richmond, Va.	2	11	9	56.91	57.56	.3000	.2944
Rochester, N. Y.	5	12	19	55.00	54.63	.3305	.3407

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

FOUNDRY AND MACHINE SHOP—Concluded.

PATTERN MAKERS, WOOD, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
St. Louis Mo.	4	14	14	54.00	54.00	$0.4000	$0.4096
St. Paul, Minn.	2	6	12	59.17	54.83	.3410	.3563
Salt Lake City, Utah	2	8	10	53.50	53.40	.4229	.4011
San Antonio, Tex.	2	4	4	54.00	54.00	.3545	.3850
San Francisco, Cal.	4	29	19	54.00	54.00	.5345	.5600
Scranton, Pa.	2	20	17	55.00	55.00	.3135	.3282
Seattle, Wash.	2	3	3	54.00	54.00	.4737	.4738
Syracuse, N. Y.	2	7	9	56.86	56.22	.3325	.3108
Terre Haute, Ind.	2	3	2	54.00	54.00	.3028	.3139
Toledo, Ohio.	2	3	2	58.00	56.50	.3011	.3167
Wilmington, Del.	2	8	8	54.00	54.00	.3293	.3329
Worcester, Mass.	2	10	12	57.60	57.58	.3070	.3192

FURNITURE.

CABINETMAKERS, Male.

Baltimore, Md.	2	8	9	59.75	59.78	$0.2220	$0.2215
Boston, Mass.	6	147	154	49.16	48.86	.3543	.3540
Chicago, Ill.	6	183	176	54.14	54.24	.2744	.2827
Cincinnati, Ohio.	5	181	166	55.26	56.06	.2561	.2522
Des Moines, Iowa.	2	18	23	50.67	50.61	.2831	.2826
Detroit, Mich.	3	88	94	50.93	51.79	.3097	.2938
Dubuque, Iowa.	2	21	20	60.00	60.00	.2081	.2229
Evansville, Ind.	4	36	35	60.00	60.00	.2197	.2230
Grand Rapids, Mich.	3	92	99	59.83	59.82	.2124	.2061
High Point, N. C.	3	74	56	59.14	59.18	.1571	.1546
Indianapolis, Ind.	3	21	21	59.14	57.86	.2437	.2448
Milwaukee, Wis.	3	80	72	56.94	57.57	.2192	.2261
New York, N. Y.(a)	6	99	80	57.37	56.86	.2608	.2628
Philadelphia, Pa.	3	129	92	53.92	55.24	.2891	.2819
St. Louis, Mo.	3	63	64	56.67	56.63	.2411	.2424

MACHINE WOODWORKERS, Male.

Baltimore, Md.	2	18	18	59.89	59.83	$0.2004	$0.2093
Boston, Mass.	6	31	34	49.71	49.47	.3281	.3275
Chicago, Ill.	6	103	85	54.45	54.56	.2691	.2799
Cincinnati, Ohio.	5	51	61	56.12	57.25	.2549	.2523
Des Moines, Iowa.	2	11	12	52.36	53.00	.2574	.2662
Detroit, Mich.	3	70	72	55.39	55.40	.2068	.2213
Dubuque, Iowa.	2	8	8	60.00	60.00	.2038	.2200
Evansville, Ind.	4	75	70	60.00	60.00	.1900	.1950
Grand Rapids, Mich.	3	89	82	59.79	59.77	.2071	.2128
High Point, N. C.	3	125	93	59.08	59.10	.1566	.1574
Indianapolis, Ind.	4	107	109	58.82	58.29	.1868	.1866
Milwaukee, Wis.	3	56	57	59.38	59.30	.1879	.1991
New York, N. Y.(a)	5	61	50	58.08	57.66	.2506	.2555
Philadelphia, Pa.	3	74	67	56.28	57.21	.2654	.2678
St. Louis, Mo.	2	80	82	60.00	60.00	.1958	.1952

SAWYERS, Male.

Baltimore, Md.	2	15	15	59.87	59.87	$0.2195	$0.2072
Boston, Mass.	5	25	26	49.88	49.42	.3374	.3453
Chicago, Ill.	6	68	75	54.61	54.45	.2660	.2699
Cincinnati, Ohio.	5	20	20	57.90	58.20	.2313	.2411
Detroit, Mich.	2	36	38	55.69	55.74	.2097	.2225
Dubuque, Iowa.	2	8	8	60.00	60.00	.1994	.2004
Evansville, Ind.	4	30	27	60.00	60.00	.1967	.1988
Grand Rapids, Mich.	3	61	61	59.82	59.82	.2122	.2147
High Point, N. C.	3	13	11	59.23	59.27	.1554	.1559
Indianapolis, Ind.	3	41	41	58.54	58.54	.1873	.1872
Milwaukee, Wis.	3	31	24	58.87	58.96	.2043	.2105
New York, N. Y.(a)	3	10	10	57.50	57.50	.2651	.2693
Philadelphia, Pa.	3	28	24	53.93	54.58	.2727	.2722
St. Louis, Mo.	2	16	16	60.00	60.00	.2161	.2161

a Greater New York.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

FURNITURE—Concluded.

UPHOLSTERERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Boston, Mass	4	76	58	49.09	48.98	$0.3814	$0.3898
Chicago, Ill	5	176	153	54.00	53.76	.2831	.2942
Des Moines, Iowa	2	21	19	60.00	60.00	.2635	.2509
Detroit, Mich	2	13	13	54.00	54.00	.2528	.2622
Indianapolis, Ind	2	24	24	58.17	55.42	.2344	.2344
New York, N. Y.(a)	4	65	66	48.65	49.03	.4151	.4055
St. Louis, Mo	2	16	16	58.50	58.50	.2545	.2545

VARNISHERS, Male.

Baltimore, Md	2	50	47	59.86	59.83	$0.1503	$0.1651
Boston, Mass	5	70	76	49.19	49.16	.3004	.3027
Chicago, Ill	7	249	234	54.55	54.59	.2253	.2316
Cincinnati, Ohio	5	75	83	57.28	56.75	.1949	.2098
Des Moines, Iowa	2	5	7	60.00	60.00	.2567	.2333
Detroit, Mich	4	93	144	56.29	56.22	.1889	.1909
Dubuque, Iowa	2	7	7	60.00	60.00	.2119	.2143
Evansville, Ind	4	34	32	60.00	60.00	.1960	.1897
Grand Rapids, Mich	3	135	130	59.67	59.71	.1742	.1766
High Point, N. C	3	48	38	59.06	59.08	.1384	.1379
Indianapolis, Ind	2	15	15	58.93	57.33	.2150	.2150
Milwaukee, Wis	3	100	97	59.05	59.43	.1698	.1750
New York, N. Y.(a)	5	121	106	58.26	58.08	.2162	.2192
Philadelphia, Pa	3	80	86	57.36	57.15	.2273	.2320
St. Louis, Mo	2	41	39	60.00	60.00	.2191	.2210

LIQUORS, MALT.

BOTTLERS, Male.

Baltimore, Md	2	17	17	54.00	54.00	$0.2222	$0.2222
Boston, Mass	2	36	36	54.00	54.00	.2490	.2495
Chicago, Ill	3	126	135	54.00	54.00	.2222	.2222
Cincinnati, Ohio	2	19	20	48.00	48.00	.2396	.2396
Detroit, Mich	2	10	9	48.00	48.00	.2719	.2801
Milwaukee, Wis	3	1,877	2,191	48.00	48.00	.1857	.2022
New York, N. Y.(a)	2	34	28	60.00	60.00	.1809	.1964
Philadelphia, Pa	2	22	26	60.00	60.00	.1633	.1638
Rochester, N. Y	2	7	16	54.00	54.00	.2064	.2008
St. Louis, Mo	2	1,434	1,445	53.98	48.00	.1842	.2365

CELLAR MEN, Male.

Baltimore, Md	2	16	16	54.00	54.00	$0.3218	$0.3241
Boston, Mass	2	54	54	54.50	54.50	.3019	.3015
Buffalo, N. Y	2	15	17	54.00	54.00	.3160	.3295
Chicago, Ill	3	32	30	48.00	48.00	.3750	.3792
Cincinnati, Ohio	2	23	23	48.00	48.00	.3351	.3351
Detroit, Mich	2	8	8	48.00	48.00	.3620	.3620
Louisville, Ky	2	21	19	54.00	54.00	.2989	.2992
Milwaukee, Wis	3	185	193	48.00	48.00	.3194	.3183
Newark, N. J	2	12	13	54.00	54.00	.3426	.3419
New York, N. Y.(a)	6	162	175	54.00	54.00	.3347	.3335
Philadelphia, Pa	3	44	46	54.08	54.05	.3036	.3037
Rochester, N. Y	2	20	22	54.00	54.00	.2470	.3148
St. Louis, Mo	2	107	111	48.00	48.00	.3420	.3718
San Francisco, Cal	2	21	29	48.00	48.00	.4375	.5000

a Greater New York.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

LIQUORS, MALT—Concluded.

COOPERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Boston, Mass	2	11	11	48.00	48.00	$0.4489	$0.5114
Buffalo, N. Y	2	5	5	54.00	54.00	.2945	.2082
Chicago, Ill	2	8	8	48.00	48.00	.3802	.3802
Milwaukee, Wis	3	240	283	48.00	48.00	.3211	.3214
New York, N. Y.(a)	6	21	22	53.67	53.68	.3363	.3396
Philadelphia, Pa	3	12	12	54.00	54.00	.2963	.2917
Rochester, N. Y	2	9	11	54.00	54.00	.2870	.3148
San Francisco, Cal	2	11	10	48.00	48.00	.4583	.5021
DRIVERS, Male.							
Baltimore, Md	2	64	67	57.09	56.87	$0.3472	$0.3550
Boston, Mass	2	76	77	54.00	54.00	.3056	.3049
Buffalo, N. Y	2	25	27	54.00	54.00	.2737	.2761
Chicago, Ill	3	27	25	48.00	48.00	.3834	.3834
Cincinnati, Ohio	2	28	29	48.00	48.00	.3326	.3283
Denver, Colo	2	16	17	57.00	57.00	.3134	.3140
Detroit, Mich	2	18	19	60.00	60.00	.2704	.2737
Louisville, Ky	2	42	39	56.29	55.43	.2277	.2349
Milwaukee, Wis	3	52	44	51.46	54.00	.3115	.2958
Newark, N. J	2	32	32	58.50	58.88	.3019	.3010
New York, N. Y.(a)	6	293	311	57.41	56.68	.3065	.3044
Philadelphia, Pa	3	71	74	60.38	60.49	.2849	.2856
Rochester, N. Y	2	14	14	54.00	54.00	.3135	.3333
St. Louis, Mo	2	75	90	63.84	60.00	.2506	.2634
San Francisco, Cal	2	15	15	60.00	60.00	.4243	.4578
FERMENTERS, Male.							
Boston, Mass	2	7	7	55.29	55.29	$0.3265	$0.3265
Buffalo, N. Y	2	6	6	54.00	54.00	.3148	.3272
Chicago, Ill	3	12	12	48.00	48.00	.3785	.3785
Cincinnati, Ohio	2	3	3	48.00	48.00	.3403	.3403
Detroit, Mich	2	4	4	48.00	48.00	.3542	.3542
Milwaukee, Wis	2	66	72	48.00	48.00	.3103	.3196
Newark, N. J	2	8	9	54.00	54.00	.3472	.3457
New York, N. Y.(a)	6	48	48	54.00	54.00	.3333	.3348
Philadelphia, Pa	3	16	17	55.50	55.41	.3043	.3044
Rochester, N. Y	2	6	7	54.00	54.00	.2886	.3214
St. Louis, Mo	2	39	36	48.00	48.00	.3405	.3724
KETTLE MEN, Male.							
Baltimore, Md	2	7	7	54.00	54.00	$0.3254	$0.3307
Boston, Mass	2	7	7	54.00	54.00	.3122	.3122
Buffalo, N. Y	2	5	6	54.00	54.00	.3166	.3318
Chicago, Ill	3	9	8	48.00	48.00	.3750	.3828
Cincinnati, Ohio	2	5	5	48.00	48.00	.3583	.3583
Detroit, Mich	2	2	2	48.00	48.00	.3646	.3750
Louisville, Ky	2	4	4	54.00	54.00	.3056	.3056
Milwaukee, Wis	3	58	63	48.00	48.00	.3190	.3183
Newark, N. J	2	6	6	54.00	54.00	.3457	.3457
New York, N. Y.(a)	6	40	46	54.00	54.00	.3407	.3466
Philadelphia, Pa	3	13	14	55.38	55.50	.3134	.3111
Rochester, N. Y	2	7	8	54.00	54.00	.2897	.3229
St. Louis, Mo	2	19	18	48.00	48.00	.3530	.3791
San Francisco, Cal	2	9	9	48.00	48.00	.4375	.5000

(a) Greater New York.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

MARBLE AND STONE WORK.

MARBLE CUTTERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Augusta, Ga	2	4	4	51.00	51.00	$0.3464	$0.3464
Baltimore, Md	2	39	27	52.46	51.33	.3803	.4074
Boston, Mass	3	49	55	48.00	48.00	.4021	.4041
Charleston, S. C	2	5	5	50.00	50.00	.3382	.3382
Cincinnati, Ohio	3	13	19	57.77	56.95	.2891	.2833
Dallas, Tex	2	4	3	53.50	53.33	.2951	.3188
Detroit, Mich	2	11	10	51.27	49.20	.4250	.4413
Jacksonville, Fla	2	17	6	50.47	51.00	.4297	.4130
Knoxville, Tenn	2	14	15	60.00	60.00	.2811	.2933
Little Rock, Ark	2	4	3	60.00	60.00	.3063	.3167
Louisville, Ky	2	6	6	53.00	54.00	.3292	.3611
Manchester, N. H	2	3	3	54.00	54.00	.2685	.2685
Memphis, Tenn	2	15	14	53.67	53.71	.2946	.3253
Montgomery, Ala	2	9	5	59.00	59.40	.2655	.2728
New Orleans, La	3	20	32	53.15	49.31	.3423	.4371
New York, N. Y.(a)	3	72	92	44.00	44.00	.6102	.6046
Norfolk, Va	2	3	2	56.00	57.00	.2899	.2417
Philadelphia, Pa	3	12	12	52.17	52.17	.3464	.3464
Pittsburg, Pa.(b)	2	12	10	48.00	48.00	.5313	.5125
Portland, Oreg	3	11	10	48.00	46.40	.4545	.5375
Providence, R. I	3	16	7	48.00	48.00	.4789	.4518
San Francisco, Cal	4	9	9	48.00	48.00	.4031	.5590
Tacoma, Wash	2	3	6	52.00	52.00	.4125	.4125
Worcester, Mass	3	4	8	48.00	48.00	.4075	.4685

STONECUTTERS, GRANITE, Male.

Atlanta, Ga	4	50	46	48.00	48.00	$0.3750	$0.3750
Augusta, Ga	2	11	11	48.00	48.00	.3750	.3750
Baltimore, Md	2	21	19	48.00	48.00	.4500	.4500
Boston, Mass	4	80	77	48.00	48.00	.4024	.4026
Buffalo, N. Y	2	13	13	48.00	48.00	.4221	.4303
Butte, Mont	2	7	8	48.00	48.00	.6061	.6400
Charleston, S. C	2	6	6	48.00	48.00	.3750	.3750
Denver, Colo	2	15	14	44.00	44.00	.5000	.5000
Jersey City, N. J	2	16	17	46.25	46.12	.4149	.4275
Little Rock, Ark	2	4	3	57.00	56.00	.3938	.4000
Manchester, N. H	2	16	13	48.00	48.00	.3711	.3726
New Haven, Conn	2	20	32	50.50	47.63	.3871	.3984
New York, N. Y.(a)	2	24	24	45.33	45.33	.5417	.5417
Norfolk, Va	2	6	5	48.00	48.00	.4375	.4375
Philadelphia, Pa	5	93	113	44.00	44.00	.4787	.4785
Pittsburg, Pa.(b)	3	17	14	48.00	48.00	.4375	.4375
Portland, Oreg	3	10	15	48.00	48.00	.5625	.6250
Providence, R. I	2	12	12	48.00	48.00	.3875	.3875
Quincy, Mass	2	38	30	48.00	48.00	.3811	.3828
Richmond, Va	3	26	27	48.00	48.00	.3750	.4383
Salt Lake City, Utah	2	5	6	50.40	50.00	.4528	.4600
San Antonio, Tex	2	18	18	47.00	47.00	.3865	.4316
San Francisco, Cal	3	118	127	48.00	48.00	.5625	.6250
Syracuse, N. Y	2	11	11	44.91	44.91	.4798	.4798
Washington, D. C	3	15	12	48.00	48.00	.4500	.4300
Wilmington, Del	2	8	8	53.25	52.50	.2992	.3206
Wilkes-Barre, Pa	2	9	6	48.00	48.00	.4500	.4583
Worcester, Mass	4	181	200	48.00	48.00	.3984	.3977

STONECUTTERS, SOFT STONE, Male.

Baltimore, Md	2	47	46	48.00	48.00	$0.5000	$0.5000
Birmingham, Ala	3	12	11	44.67	44.73	.4500	.4500
Buffalo, N. Y	2	46	34	48.00	48.00	.5000	.5000
Chicago, Ill	2	15	14	44.00	44.00	.5625	.5625
Cincinnati, Ohio	2	38	44	45.71	45.68	.5625	.5625
Davenport, Iowa	2	7	7	48.29	48.29	.4800	.4800
Denver, Colo	4	24	28	44.00	44.00	.5600	.6250
Des Moines, Iowa	2	13	9	44.92	44.44	.5000	.5000
Detroit, Mich	3	23	24	45.04	44.67	.5000	.5000
Dubuque, Iowa	2	14	13	48.00	48.00	.5000	.5000

(a) Greater New York (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

MARBLE AND STONE WORK—Concluded.

STONECUTTERS, SOFT STONE, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Indianapolis, Ind	3	40	22	47.15	47.18	$0.4804	$0.4563
Little Rock, Ark	2	25	12	44.48	45.00	.5500	.5500
Louisville, Ky	2	26	15	48.00	48.00	.4788	.5050
Memphis, Tenn	2	10	8	44.00	44.00	.6000	.6438
Milwaukee, Wis	3	33	37	48.00	48.00	.4905	.5017
Nashville, Tenn	2	22	19	48.00	48.00	.4545	.4579
Newark, N. J	3	87	104	44.28	44.49	.5618	.5529
New York, N. Y.(a)	4	149	131	44.00	44.00	.5591	.5615
Norfolk, Va	2	5	4	48.00	48.00	.4750	.4688
Philadelphia, Pa	3	56	56	44.00	44.00	.5000	.5000
Portland, Oreg	3	16	18	46.50	44.00	.6211	.6667
Richmond, Va	2	5	5	48.00	48.00	.4150	.4250
St. Louis, Mo	2	14	14	44.00	44.00	.5625	.5625
St. Paul, Minn	2	6	8	48.00	48.00	.5250	.5859
Trenton, N. J	2	112	25	44.00	44.00	.5000	.5000
Washington, D. C	3	16	27	48.00	48.00	.5000	.5000
Wheeling, W. Va	2	8	9	49.88	49.67	.4539	.4333

PLANING MILL.

CARPENTERS, Male.

Atlanta, Ga	2	64	59	60.00	60.00	$0.2464	$0.2598
Baltimore, Md	3	42	42	56.29	54.00	.2789	.2945
Boston, Mass	2	21	20	48.00	48.00	.3986	.4077
Buffalo, N. Y	4	72	96	60.00	60.00	.2434	.2644
Cincinnati, Ohio	3	37	36	54.54	54.58	.2958	.3030
Cleveland, Ohio	2	17	17	59.00	59.00	.2574	.2596
Detroit, Mich	3	70	79	50.74	50.71	.3496	.3497
Dubuque, Iowa	2	28	28	60.00	60.00	.2200	.2400
Indianapolis, Ind	2	15	15	55.60	55.60	.2617	.2633
Jacksonville, Fla	2	4	7	55.50	54.86	.2903	.2996
Lake Charles, La	2	5	5	55.20	60.00	.3045	.2850
Los Angeles, Cal	2	7	11	49.71	49.82	.4054	.3933
Louisville, Ky	2	26	25	54.00	54.00	.2659	.2641
Milwaukee, Wis	2	39	30	60.00	60.00	.2114	.2156
Montgomery, Ala	2	12	14	60.00	60.00	.2607	.2643
Muscatine, Iowa	2	47	36	60.00	60.00	.2037	.1894
New Orleans, La	2	45	42	54.00	54.00	.2559	.2707
New York, N. Y.(a)	7	176	199	49.34	49.36	.3742	.3783
North Tonawanda, N. Y	2	17	17	57.53	56.94	.2597	.2739
Oshkosh, Wis	3	13	24	60.00	60.00	.1875	.1889
Philadelphia, Pa	2	35	38	50.57	50.74	.3007	.3045
Pittsburg, Pa.(b)	4	35	30	51.26	54.00	.4190	.4213
Racine, Wis	2	16	19	59.00	59.00	.2495	.2596
Rochester, N. Y	2	30	40	54.00	54.00	.2611	.2722
Saginaw, Mich	3	5	6	60.00	60.00	.1950	.1933
St. Louis, Mo	2	52	55	60.00	60.00	.2880	.2945
Salt Lake City, Utah	2	16	14	48.13	47.86	.3875	.4196
San Francisco, Cal	2	22	37	48.00	48.00	.5682	.5710
Terre Haute, Ind	2	17	16	55.76	54.00	.2500	.2688

LABORERS, Male.

Atlanta, Ga	2	126	138	60.00	60.00	$0.1135	$0.1183
Baltimore, Md	3	28	28	57.21	57.21	.1536	.1536
Buffalo, N. Y	4	71	75	60.00	60.00	.1639	.1668
Cadillac, Mich	2	86	92	60.00	60.00	.1538	.1608
Charleston, S. C	2	29	54	60.21	60.85	.0876	.0978
Chicago, Ill	2	33	33	56.55	56.91	.1712	.1733
Cincinnati, Ohio	3	13	12	58.62	56.08	.1670	.1735
Cleveland, Ohio	2	23	20	59.00	59.00	.1535	.1550
Detroit, Mich	2	36	46	51.00	50.52	.1831	.1976
Dubuque, Iowa	2	124	122	60.00	60.00	.1504	.1590
Indianapolis, Ind	2	17	19	55.35	55.42	.1632	.1645
Jacksonville, Fla	2	116	123	60.00	60.00	.1282	.1285
Lake Charles, La	3	114	113	59.68	60.00	.1616	.1722

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

PLANING MILL—Continued.

LABORERS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Louisville, Ky.	2	13	16	54.00	54.00	$0.1369	$0.1602
Milwaukee, Wis.	2	36	43	60.00	60.00	.1513	.1603
Minneapolis, Minn.	3	183	186	60.00	60.00	.1740	.1799
Montgomery, Ala.	2	19	29	60.00	60.00	.1082	.1144
Muscatine, Iowa.	2	102	114	60.00	60.00	.1314	.1329
New Orleans, La.	2	28	21	54.00	54.00	.1603	.1616
New York, N. Y. (a)	7	70	54	55.07	54.76	.1829	.1836
North Tonawanda, N. Y.	3	82	81	60.00	59.84	.1645	.1684
Oshkosh, Wis.	3	116	132	60.00	60.00	.1495	.1515
Pittsburg, Pa. (b)	4	8	10	54.00	54.00	.1944	.2009
Racine, Wis.	2	7	8	59.00	59.00	.1621	.1611
Rochester, N. Y.	2	16	18	54.00	54.00	.1806	.1996
Saginaw, Mich.	3	168	158	60.00	60.00	.1424	.1507
San Francisco, Cal.	2	31	27	48.00	48.00	.3075	.3194
Terre Haute, Ind.	2	8	9	59.75	58.00	.1679	.1641

MACHINE WOODWORKERS, Male.

Atlanta, Ga.	2	42	44	60.00	60.00	$0.2352	$0.2407
Baltimore, Md.	3	43	44	57.77	54.00	.2460	.2581
Boston, Mass.	2	16	14	48.00	48.00	.3447	.3707
Buffalo, N. Y.	4	22	33	60.00	58.36	.2432	.2545
Cadillac, Mich.	2	36	28	60.00	60.00	.1888	.1975
Charleston, S. C.	2	7	7	60.43	60.43	.1229	.1336
Chicago, Ill.	2	23	25	57.13	56.88	.3043	.3250
Cincinnati, Ohio.	3	24	26	54.42	54.42	.2963	.3078
Cleveland, Ohio.	2	28	26	59.00	59.00	.2732	.2673
Detroit, Mich.	3	34	35	51.06	50.29	.2973	.3182
Dubuque, Iowa.	2	69	69	60.00	60.00	.1974	.2152
Indianapolis, Ind.	2	16	14	55.56	55.50	.2719	.2750
Jacksonville, Fla.	2	22	55	57.55	59.02	.1973	.1528
Lake Charles, La.	3	32	35	58.69	60.00	.2089	.1995
Los Angeles, Cal.	2	22	14	49.36	49.14	.3735	.4057
Louisville, Ky.	2	25	21	54.00	54.00	.2534	.2436
Milwaukee, Wis.	2	33	39	60.00	60.00	.1923	.1977
Minneapolis, Minn.	3	52	53	60.00	60.00	.2200	.2260
Montgomery, Ala.	2	10	10	60.00	60.00	.2400	.2200
Muscatine, Iowa.	2	84	90	60.00	60.00	.1774	.1841
New Orleans, La.	2	41	40	54.00	54.00	.2521	.2689
New York, N. Y. (a)	8	79	72	50.32	48.96	.3793	.4142
North Tonawanda, N. Y.	3	12	13	60.00	59.77	.2363	.2421
Oshkosh, Wis.	3	110	122	60.00	60.00	.1591	.1671
Philadelphia, Pa.	2	14	16	52.57	52.25	.3195	.3246
Pittsburg, Pa. (b)	4	21	19	54.00	54.00	.3968	.4166
Racine, Wis.	2	15	19	59.00	59.00	.2262	.2306
Rochester, N. Y.	2	64	94	54.00	54.00	.2565	.2586
Saginaw, Mich.	3	47	43	60.00	60.00	.1543	.1629
St. Louis, Mo.	2	51	55	60.00	60.00	.2731	.2718
Salt Lake City, Utah.	2	9	6	48.33	48.00	.4036	.4333
San Francisco, Cal.	2	13	18	48.00	48.00	.6563	.6514
Tacoma, Wash.	2	58	74	60.00	60.00	.2474	.2712
Terre Haute, Ind.	2	6	5	55.67	54.00	.2792	.2700

SAWYERS, Male.

Atlanta, Ga.	2	9	12	60.00	60.00	$0.2167	$0.2333
Baltimore, Md.	3	17	17	56.47	54.00	.2332	.2496
Boston, Mass.	2	8	8	48.00	48.00	.3720	.3838
Buffalo, N. Y.	4	13	11	60.00	58.91	.2423	.2568
Cadillac, Mich.	2	3	3	60.00	60.00	.2167	.2100
Charleston, S. C.	2	2	2	60.50	60.50	.1284	.1409
Chicago, Ill.	2	14	13	56.14	55.85	.3074	.3372
Cincinnati, Ohio.	3	12	10	54.33	54.40	.2943	.3017
Cleveland, Ohio.	2	8	8	59.00	59.00	.2781	.2781
Detroit, Mich.	3	9	8	50.89	51.00	.3289	.3215
Dubuque, Iowa.	2	15	14	60.00	60.00	.2143	.2296
Indianapolis, Ind.	2	8	8	55.88	55.88	.2594	.2594

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

PLANING MILL—Concluded.

SAWYERS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Jacksonville, Fla	2	5	5	56.40	56.40	$0.2661	$0.2767
Los Angeles, Cal	2	7	7	49.14	49.14	.3686	.3532
Louisville, Ky	2	4	4	54.00	54.00	.2703	.2628
Milwaukee, Wis	2	17	20	60.00	60.00	.2160	.2089
Minneapolis, Minn	3	26	30	60.00	60.00	.2181	.2182
Muscatine, Iowa	2	31	37	60.00	60.00	.1882	.1805
New Orleans, La	2	14	12	54.00	54.00	.2999	.2611
New York, N. Y. (a)	8	52	47	50.88	50.81	.3506	.3610
North Tonawanda, N. Y	3	9	8	59.33	59.88	.2077	.2036
Oshkosh, Wis	3	33	34	60.00	60.00	.1770	.1840
Philadelphia, Pa	2	10	11	52.00	51.82	.2726	.2695
Pittsburg, Pa. (b)	2	4	4	54.00	54.00	.4236	.4097
Racine, Wis	2	5	6	59.00	59.00	.2483	.2444
Saginaw, Mich	3	54	57	60.00	60.00	.1528	.1662
St. Louis, Mo	2	25	27	60.00	60.00	.2638	.2702
San Francisco, Cal	2	7	7	48.00	48.00	.5759	.6071
Tacoma, Wash	2	29	18	60.00	60.00	.2388	.2689
Terre Haute, Ind	2	3	3	55.67	54.00	.2667	.2667

PRINTING AND BINDING, BOOK AND JOB.

BOOKBINDERS, Male.

Albany, N. Y	2	49	58	52.90	53.17	$0.3984	$0.4112
Atlanta, Ga	2	5	9	54.00	54.00	.3056	.3159
Baltimore, Md	2	13	9	55.38	52.44	.3290	.3199
Birmingham, Ala	2	6	7	51.00	50.57	.3413	.3594
Boston, Mass	3	34	39	54.00	53.23	.3407	.3451
Buffalo, N. Y	2	16	16	54.00	54.00	.3056	.3102
Butte, Mont	3	4	5	48.00	48.00	.6146	.6375
Charleston, S. C	2	10	10	54.00	54.00	.3037	.3232
Chicago, Ill	3	88	81	54.00	54.00	.3129	.3109
Cincinnati, Ohio	3	49	48	54.86	53.00	.2920	.3070
Cleveland, Ohio	2	15	15	54.00	54.00	.2895	.2901
Dallas, Tex	2	12	15	53.00	53.00	.3561	.3762
Denver, Colo	2	15	15	48.00	48.00	.3958	.3917
Des Moines, Iowa	2	5	3	54.00	54.00	.3259	.3704
Detroit, Mich	2	29	39	54.00	54.00	.3052	.3048
Dubuque, Iowa	2	7	7	49.71	48.00	.3095	.3214
Duluth, Minn	2	5	7	53.00	53.00	.2679	.3369
Grand Rapids, Mich	2	6	8	54.00	54.00	.2901	.2986
Indianapolis, Ind	2	28	28	54.00	54.00	.3466	.3506
Little Rock, Ark	2	8	12	53.00	53.00	.3538	.3585
Los Angeles, Cal	3	18	20	52.67	52.95	.3513	.3597
Louisville, Ky	4	24	25	54.00	54.00	.2705	.2859
Minneapolis, Minn	2	14	12	53.14	53.17	.3262	.3258
New Haven, Conn	2	13	17	54.00	54.00	.2949	.2996
New Orleans, La	2	11	6	54.00	50.00	.2921	.3299
New York, N. Y. (a)	4	47	37	54.00	54.00	.3842	.3893
Norfolk, Va	2	8	7	53.38	52.57	.2885	.3309
Omaha, Nebr	2	9	8	54.00	54.00	.3333	.3195
Philadelphia, Pa	3	38	40	52.89	50.25	.3358	.3476
Pittsburg, Pa. (b)	2	19	20	54.00	54.00	.3060	.3056
Richmond, Va	2	16	13	54.00	54.00	.2778	.2899
St. Louis, Mo	3	54	63	54.00	54.00	.3188	.3181
St. Paul, Minn	3	37	41	53.35	53.29	.3389	.3444
San Antonio, Tex	2	5	6	53.00	53.00	.3283	.3396
Seattle, Wash	3	9	12	48.00	48.00	.3750	.4566
Sioux Falls, S. Dak	2	5	6	54.00	54.00	.3296	.3503
Tacoma, Wash	3	7	10	48.00	48.00	.4107	.4302
Terre Haute, Ind	2	8	6	53.75	53.83	.3046	.3025
Toledo, Ohio	3	9	10	54.00	54.00	.2881	.3046
Topeka, Kans	2	6	6	54.00	54.00	.3117	.3364
Trenton, N. J	2	10	10	51.00	48.00	.2902	.3208
Washington, D. C	2	5	6	53.80	50.83	.3266	.3417
Wheeling, W. Va	2	7	6	54.00	54.00	.2725	.2994
Wilkes-Barre, Pa	2	11	13	50.73	51.46	.3148	.3380

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

PRINTING AND BINDING, BOOK AND JOB—Continued.

COMPOSITORS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Albany, N. Y.	2	128	120	48.00	48.00	$0.3586	$0.3587
Atlanta, Ga.	2	28	34	54.00	54.00	.2880	.2914
Baltimore, Md.	4	88	85	52.02	49.29	.3328	.3313
Birmingham, Ala.	2	25	20	50.16	50.70	.3500	.3410
Boston, Mass.	5	94	113	49.97	50.12	.3530	.3615
Buffalo, N. Y.	2	22	21	54.00	54.00	.3388	.3510
Butte, Mont.	3	11	14	48.00	48.00	.6250	.6250
Cincinnati, Ohio.	2	31	31	54.87	50.84	.3258	.3630
Charleston, S. C.	2	11	14	54.00	54.00	.3266	.3320
Chicago, Ill.	3	118	100	49.93	50.28	.3901	.3861
Cleveland, Ohio.	2	26	24	50.08	50.25	.3682	.3672
Dallas, Tex.	2	20	21	53.00	53.00	.3661	.3630
Denver, Colo.	2	28	38	48.00	48.00	.4241	.4340
Des Moines, Iowa.	2	13	10	54.00	54.00	.3077	.3565
Detroit, Mich.	2	24	18	54.00	54.00	.3310	.3323
Dubuque, Iowa.	3	8	9	49.50	48.00	.3064	.3241
Duluth, Minn.	2	6	7	53.00	53.00	.3333	.2817
Grand Rapids, Mich.	2	16	18	51.00	51.33	.3252	.3200
Indianapolis, Ind.	2	54	33	48.00	48.00	.3718	.3794
Jacksonville, Fla.	2	23	25	52.70	52.32	.3424	.3450
Jersey City, N. J.	3	17	18	50.98	48.00	.3886	.4132
Kansas City, Mo.	2	32	33	54.00	54.00	.3030	.3008
Little Rock, Ark.	2	16	21	52.06	52.05	.3430	.3676
Los Angeles, Cal.	3	29	25	52.34	52.56	.3631	.3799
Louisville, Ky.	4	60	59	53.53	53.54	.2984	.3176
Lynn, Mass.	2	8	7	55.00	54.43	.2568	.2548
Milwaukee, Wis.	2	22	22	54.00	54.00	.2980	.3030
Minneapolis, Minn.	2	28	21	53.50	53.48	.3333	.3243
Montgomery, Ala.	3	8	7	52.50	52.29	.3281	.3284
New Haven, Conn.	3	45	43	54.00	54.00	.3152	.3260
New Orleans, La.	3	30	23	51.10	51.39	.3434	.3348
New York, N. Y. (a)	4	197	190	48.00	48.00	.4487	.4516
Norfolk, Va.	3	30	30	48.00	48.00	.3373	.3613
Omaha, Nebr.	2	15	14	54.00	54.00	.3321	.3378
Peoria, Ill.	2	9	8	50.00	50.25	.3417	.3516
Philadelphia, Pa.	6	121	112	53.19	51.93	.3378	.3587
Pittsburg, Pa. (b)	2	47	43	54.00	54.00	.3270	.3290
Portland, Oreg.	2	17	14	48.00	48.00	.4305	.4785
Richmond, Va.	3	24	24	54.00	54.00	.3318	.3241
Rochester, N. Y.	2	26	26	50.31	50.31	.3331	.3266
St. Louis, Mo.	3	152	167	49.58	49.76	.3553	.3574
St. Paul, Minn.	2	28	29	53.54	53.34	.2993	3180
Salt Lake City, Utah.	2	14	15	50.36	49.87	.4166	.4632
San Antonio, Tex.	2	15	14	53.00	53.00	.3296	.3275
San Francisco, Cal.	3	13	15	48.00	48.00	.4711	.4736
Scranton, Pa.	4	54	42	48.00	48.00	.3589	.3859
Seattle, Wash.	3	24	24	48.00	48.00	.4449	.5035
Sioux Falls, S. Dak.	2	15	14	54.00	54.00	.3012	.2923
Syracuse, N. Y.	2	16	16	54.00	49.88	.2801	.3138
Tacoma, Wash.	3	12	11	48.00	48.00	.4106	.4811
Terre Haute, Ind.	2	13	12	48.00	48.00	.3365	.3438
Toledo, Ohio.	3	23	22	54.00	52.64	.3144	.3280
Topeka, Kans.	2	9	14	54.00	54.00	.3148	3069
Trenton, N. J.	2	21	22	51.00	48.00	.3193	.3864
Washington, D. C.	2	11	13	53.64	52.23	.3409	.3724
Wheeling, W. Va.	2	23	23	48.00	48.00	.3229	.3478
Wilkes-Barre, Pa.	3	21	17	51.57	50.06	.3210	.3374
Wilmington, Del.	2	4	4	52.75	52.75	.2812	.2812
Worcester, Mass.	2	8	8	54.00	54.00	.2871	.2789

SEWERS AND STITCHERS, BOOK, Female.

Albany, N. Y.	2	19	19	52.42	52.74	$0.1320	$0.1364
Atlanta, Ga.	2	16	16	54.00	54.00	.0828	.0984
Baltimore, Md.	3	13	10	54.31	52.30	.1158	.1233
Birmingham, Ala.	2	23	20	50.09	50.10	.1054	.1116
Boston, Mass.	3	22	23	54.00	52.43	.1456	.1440
Buffalo, N. Y.	2	13	9	54.00	54.00	.1141	.1252
Butte, Mont.	4	12	13	48.00	48.00	.2014	.2035

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

PRINTING AND BINDING, BOOK AND JOB—Concluded.

SEWERS AND STITCHERS, BOOK, Female—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Charleston, S. C	2	17	15	54.00	54.00	$0.0817	$0.0914
Chicago, Ill	2	19	17	54.00	54.00	.1505	.1719
Cincinnati, Ohio	3	40	48	55.13	53.79	.1384	.1500
Cleveland, Ohio	2	5	6	54.00	54.00	.1407	.1466
Dallas, Tex	2	19	27	53.00	53.00	.1117	.1125
Denver, Colo	2	23	21	48.00	48.00	.1699	.1761
Des Moines, Iowa	2	13	12	54.00	54.00	.1268	.1203
Detroit, Mich	2	29	27	54.00	54.00	.1028	.1135
Dubuque, Iowa	3	5	6	51.00	48.00	.1123	.1198
Duluth, Minn	2	8	8	53.00	53.00	.0755	.0949
Grand Rapids, Mich	2	9	10	54.00	54.00	.1111	.1278
Indianapolis, Ind	2	8	17	54.00	54.00	.1389	.1296
Jersey City, N. J	2	13	17	53.77	53.29	.0959	.1037
Little Rock, Ark	2	13	24	53.00	53.00	.0958	.0967
Los Angeles, Cal	4	34	28	52.85	52.61	.1366	.1462
Louisville, Ky	4	36	38	54.00	54.00	.1200	.1199
Minneapolis, Minn	2	17	22	53.18	53.14	.1457	.1349
New Haven, Conn	3	28	20	54.00	54.00	.1220	.1444
New Orleans, La	3	21	20	54.00	53.10	.1120	.1091
New York, N. Y. (a)	3	24	22	54.00	54.00	.1840	.1697
Norfolk, Va	2	6	7	53.50	52.87	.1030	.1071
Omaha, Nebr	2	18	19	54.00	54.00	.1229	.1267
Philadelphia, Pa	4	34	42	53.41	53.05	.1287	.1323
Pittsburg, Pa. (b)	2	23	24	54.00	54.00	.1155	.1219
Richmond, Va	3	24	25	54.00	54.00	.1011	.1085
St. Louis, Mo	3	71	99	54.00	54.00	.1099	.1062
St. Paul, Minn	3	17	25	53.65	53.76	.1529	.1488
San Antonio, Tex	2	24	30	53.00	53.00	.0814	.0843
Seattle, Wash	3	15	21	48.00	48.00	.1674	.2113
Sioux Falls, S. Dak	2	8	7	54.00	54.00	.0926	.1138
Syracuse, N. Y	2	13	14	54.00	54.00	.1147	.1177
Tacoma, Wash	3	15	16	48.00	48.00	.1347	.1465
Toledo, Ohio	3	21	25	54.00	54.00	.1007	.0990
Topeka, Kans	2	17	17	54.00	54.00	.0915	.0980
Trenton, N. J	2	10	12	51.00	48.00	.1176	.1302
Washington, D. C	2	14	14	53.71	51.14	.1310	.1396
Wheeling, W. Va	2	20	23	54.00	54.00	.0852	.0854
Wilkes-Barre, Pa	2	6	5	49.67	50.00	.1180	.1166

PRINTING, NEWSPAPER.

COMPOSITORS, Male.

Albany, N. Y	2	11	9	48.00	48.00	$0.3864	$0.4282
Atlanta, Ga	2	25	25	48.00	48.00	.4183	.4183
Baltimore, Md	5	104	114	48.00	42.11	.4577	.5316
Birmingham, Ala	2	20	21	48.00	48.00	.4625	.4667
Boston, Mass	3	165	156	42.00	42.00	.5855	.5688
Buffalo, N. Y	2	46	51	48.00	48.00	.4498	.4607
Butte, Mont	2	15	12	45.00	45.00	.7733	.7167
Charleston, S. C	2	3	2	50.67	52.00	.3710	.4420
Chicago, Ill	3	137	144	46.10	45.78	.6592	.6714
Cincinnati, Ohio	3	49	49	48.00	48.00	.5226	.5434
Cleveland, Ohio	2	34	33	48.00	48.00	.4939	.5437
Dallas, Tex	2	23	26	48.00	48.00	.4920	.4987
Denver, Colo	2	23	25	46.00	46.00	.5745	.6230
Des Moines, Iowa	2	22	26	48.00	48.00	.4319	.4376
Dubuque, Iowa	2	5	4	48.00	48.00	.3333	.3333
Duluth, Minn	2	11	16	48.00	48.00	.4545	.4813
Fall River, Mass	2	8	8	48.00	48.00	.3021	.3021
Grand Rapids, Mich	2	24	29	48.00	48.00	.4100	.4078
Harrisburg, Pa	2	10	11	54.00	54.00	.2556	.2720
Indianapolis, Ind	2	32	36	48.00	48.00	.4668	.4734
Jacksonville, Fla	2	12	13	45.00	44.77	.4514	.4551
Little Rock, Ark	2	9	9	48.00	48.00	.3750	.4130
Los Angeles, Cal	2	36	38	48.00	48.00	.5677	.6069
Louisville, Ky	2	25	24	48.64	48.63	.5024	.5025
Lynn, Mass	2	18	19	47.00	47.00	.4043	.4043

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

PRINTING, NEWSPAPER—Continued.

COMPOSITORS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Manchester, N. H.	2	6	6	48.00	48.00	$0.3576	$0.3576
Memphis, Tenn.	2	48	50	49.13	49.20	.4968	.5022
Milwaukee, Wis.	2	25	22	48.00	48.00	.4384	.4673
Minneapolis, Minn.	2	37	37	45.68	45.68	.4635	.4635
Montgomery, Ala.	2	6	6	49.33	49.33	.3465	.4031
Nashville, Tenn.	2	31	31	48.00	48.00	.4657	.4657
New Haven, Conn.	3	7	9	48.00	48.00	.4375	.4375
New Orleans, La.	2	56	51	48.36	48.39	.5804	.5804
New York, N. Y. (a)	4	162	161	47.78	47.75	.5808	.6292
Norfolk, Va.	2	7	8	48.00	48.00	.3631	.3906
Omaha, Nebr.	2	17	17	48.00	48.00	.4485	.4485
Peoria, Ill.	2	7	8	48.00	48.00	.4465	.4436
Philadelphia, Pa.	3	96	93	49.50	49.61	.4202	.4326
Pittsburg, Pa. (b)	2	58	76	48.00	48.00	.5857	.5836
Portland, Me.	2	9	9	48.56	48.56	.3597	.3597
Portland, Oreg.	2	53	60	48.00	48.00	.5867	.5802
Providence, R. I.	2	23	23	48.00	48.00	.4538	.4538
Richmond, Va.	2	13	13	52.62	52.62	.3916	.3835
Rochester, N. Y.	2	64	71	48.00	48.00	.3916	.3876
St. Louis, Mo.	3	89	110	45.28	45.23	.5820	.5814
St. Paul, Minn.	2	49	53	48.82	49.02	.4753	.5000
Salt Lake City, Utah.	3	11	13	48.55	49.31	.5732	.5949
San Antonio, Tex.	2	9	10	49.33	50.10	.5146	.5031
San Francisco, Cal.	2	39	33	45.00	45.00	.6701	.8000
Scranton, Pa.	2	10	11	48.00	48.00	.4063	.4449
Seattle, Wash.	2	45	50	44.53	44.70	.6181	.6262
Sioux Falls, S. Dak.	2	5	5	48.00	48.00	.3959	.4000
Syracuse, N. Y.	2	22	23	48.00	48.00	.4469	.4656
Tacoma, Wash.	2	13	17	48.00	48.00	.5625	.6060
Tampa, Fla.	2	22	19	48.00	48.00	.4318	.4342
Terre Haute, Ind.	2	20	20	48.00	48.00	.4115	.4281
Toledo, Ohio.	2	32	34	48.00	48.00	.4063	.4479
Topeka, Kans.	2	13	12	48.00	48.00	.4095	.4115
Washington, D. C.	2	64	70	43.41	43.59	.6034	.6094
Wheeling, W. Va.	2	8	8	48.00	48.00	.4536	.4786
Wilmington, Del.	2	10	11	52.80	53.45	.2764	.2959
Worcester, Mass.	2	27	30	48.00	48.00	.4612	.4522
LINOTYPE OPERATORS, Male.							
Albany, N. Y.	2	17	15	48.00	48.00	$0.4461	$0.4833
Atlanta, Ga.	2	25	25	44.64	44.64	.7424	.7222
Baltimore, Md.	5	91	87	42.40	42.41	.5377	.5601
Birmingham, Ala.	2	14	18	42.00	42.00	.5000	.6008
Boston, Mass.	3	132	133	42.00	42.00	.6236	.6228
Buffalo, N. Y.	2	36	36	48.00	48.00	.4590	.4870
Butte, Mont.	2	10	11	45.00	45.00	.7867	.7333
Charleston, S. C.	2	10	10	42.50	42.50	.6872	.7009
Chicago, Ill.	3	104	103	46.50	46.38	.7086	.7162
Cincinnati, Ohio.	3	60	59	48.00	48.00	.5292	.5498
Cleveland, Ohio.	2	50	49	48.00	48.00	.5079	.5456
Dallas, Tex.	2	25	25	48.00	48.00	.8955	.9040
Denver, Colo.	2	27	25	46.00	46.00	.6261	.8021
Des Moines, Iowa.	2	15	18	48.00	48.00	.4306	.4445
Detroit, Mich.	2	39	44	46.85	45.55	.5558	.5655
Dubuque, Iowa.	2	14	13	48.00	48.00	.3512	.3558
Duluth, Minn.	2	26	26	48.00	48.00	.4348	.4027
Fall River, Mass.	2	10	10	48.00	48.00	.3750	.3750
Grand Rapids, Mich.	2	14	15	48.00	48.00	.4214	.4231
Harrisburg, Pa.	2	9	9	54.00	54.00	.4535	.4702
Indianapolis, Ind.	2	38	43	48.00	48.00	.4526	.4583
Jacksonville, Fla.	2	12	12	42.00	42.00	.6210	.6973
Little Rock, Ark.	2	12	13	44.50	44.31	.6109	.5702
Los Angeles, Cal.	2	58	60	48.00	48.00	.5836	.6146
Louisville, Ky.	2	22	22	48.45	48.45	.4927	.4927
Lynn, Mass.	2	13	14	46.85	46.86	.4157	.4119
Memphis, Tenn.	2	25	23	50.00	50.00	.6251	.6554
Milwaukee, Wis.	2	24	27	48.00	48.00	.4518	.4522
Minneapolis, Minn.	2	46	46	42.70	42.70	.5988	.6348
Montgomery, Ala.	2	11	11	48.73	48.73	.6340	.6280
Nashville, Tenn.	2	25	25	48.00	48.00	.4775	.4775
New Haven, Conn.	3	20	20	48.00	48.00	.4375	.4375
New Orleans, La.	2	44	43	47.73	47.91	.6796	.6927

a Greater New York. b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

PRINTING, NEWSPAPER—Continued.

LINOTYPE OPERATORS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
New York, N. Y. (a)	4	172	176	47.80	47.77	$0.6942	$0.6965
Norfolk, Va.	2	11	12	48.00	48.00	.3807	.4254
Omaha, Nebr.	2	40	33	48.00	48.00	.4766	.4754
Peoria, Ill.	2	19	20	48.00	48.00	.4173	.4244
Philadelphia, Pa.	3	78	81	45.23	45.58	.6106	.5747
Pittsburg, Pa. (b)	2	109	72	48.00	48.00	.5894	.5892
Portland, Me.	2	8	3	49.63	48.00	.3790	.4167
Portland, Oreg.	2	46	47	48.00	48.00	.5978	.5951
Providence, R. I.	2	29	34	43.45	43.06	.7005	.6895
Richmond, Va.	2	23	23	51.91	51.91	.4251	.4653
Rochester, N. Y.	2	26	25	48.00	48.00	.4343	.4350
St. Louis, Mo.	3	58	61	46.90	46.98	.6880	.6839
St. Paul, Minn.	2	30	28	49.07	49.14	.4805	.4911
Salt Lake City, Utah	3	21	25	45.86	48.56	.6633	.6930
San Antonio, Tex.	2	17	18	49.53	50.33	.5610	.5551
San Francisco, Cal.	2	38	31	45.00	45.00	.6737	.8022
Scranton, Pa.	2	10	11	48.00	48.00	.4229	.4452
Seattle, Wash.	2	38	35	43.21	43.23	.6225	.6399
Sioux Falls, S. Dak.	2	5	5	48.00	48.00	.4208	.4563
Syracuse, N. Y.	2	20	21	48.00	48.00	.4323	.4544
Tacoma, Wash.	2	20	26	48.00	48.00	.5813	.5938
Tampa, Fla.	2	6	9	49.00	48.00	.5502	.5208
Terre Haute, Ind.	2	12	16	48.00	48.00	.4064	.4258
Toledo, Ohio	2	26	26	48.00	48.00	.4063	.4479
Topeka, Kans.	2	13	13	48.00	48.00	.4167	.4231
Washington, D. C.	2	52	63	43.38	43.57	.6932	.6139
Wheeling, W. Va.	2	15	15	48.00	48.00	.4493	.4743
Worcester, Mass.	2	19	22	48.00	48.00	.4803	.4801
STEREOTYPERS, Male.							
Albany, N. Y.	2	2	2	52.00	52.00	$0.4271	$0.4668
Atlanta, Ga.	2	10	10	48.00	48.00	.3625	.4375
Baltimore, Md.	4	21	21	42.57	42.00	.4540	.5025
Birmingham, Ala.	2	2	2	55.50	52.00	.3733	.4353
Boston, Mass.	3	64	62	42.00	42.00	.6131	.6129
Buffalo, N. Y.	2	5	6	52.80	53.33	.4161	.3572
Butte, Mont.	2	4	4	56.00	56.00	.5602	.5603
Charleston, S. C.	2	2	2	48.50	48.50	.3087	.3087
Chicago, Ill.	3	45	47	49.33	49.49	.4947	.4961
Cincinnati, Ohio	3	18	17	48.61	48.53	.4015	.4328
Cleveland, Ohio	2	9	10	48.00	48.00	.4063	.4302
Dallas, Tex.	2	6	6	56.00	56.00	.3066	.3066
Denver, Colo.	2	7	7	47.71	47.71	.4402	.4717
Des Moines, Iowa	2	4	4	52.00	48.00	.3619	.3620
Detroit, Mich.	2	14	16	48.86	46.69	.3979	.4558
Duluth, Minn.	2	4	4	48.00	48.00	.4011	.4271
Fall River, Mass.	2	2	2	48.00	48.00	.3750	.3750
Grand Rapids, Mich.	2	3	4	47.00	51.00	.4074	.4028
Harrisburg, Pa.	2	4	4	54.00	54.00	.2685	.2778
Indianapolis, Ind.	2	12	13	48.00	48.00	.4063	.4063
Jacksonville, Fla.	2	2	2	45.50	45.50	.4694	.3674
Little Rock, Ark.	2	2	2	52.50	52.50	.4931	.5351
Los Angeles, Cal.	2	12	11	48.00	48.00	.5104	.5455
Louisville, Ky.	2	5	4	45.00	45.50	.3658	.4038
Lynn, Mass.	2	3	3	42.00	42.00	.5714	.5714
Memphis, Tenn.	2	8	9	52.00	51.56	.3933	.4120
Milwaukee, Wis.	2	9	9	55.11	54.67	.3507	.3363
Minneapolis, Minn.	2	7	7	54.86	54.86	.3069	.3069
New Haven, Conn.	3	3	3	56.00	56.00	.3958	.3958
New Orleans, La.	2	5	5	53.20	53.20	.3839	.4189
New York, N. Y. (a)	4	69	69	42.46	42.46	.6536	.6536
Norfolk, Va.	2	2	2	48.00	48.00	.3125	.3646
Omaha, Nebr.	2	9	9	48.00	48.00	.3819	.4097
Peoria, Ill.	2	2	2	53.00	53.00	.3975	.3975
Philadelphia, Pa.	3	32	33	47.25	47.52	.4108	.4343
Pittsburg, Pa. (b)	2	24	21	56.00	52.95	.3773	.4239
Portland, Me.	3	3	3	53.00	53.00	.3542	.3542
Portland, Oreg.	2	7	9	48.00	48.00	.4688	.4827
Providence, R. I.	2	16	16	45.50	45.50	.5222	.5222
Richmond, Va.	2	5	4	50.40	51.00	.3481	.3662
Rochester, N. Y.	2	6	6	44.00	44.00	.4018	.4217

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

PRINTING, NEWSPAPER—Concluded.

STEREOTYPERS, Male—Concluded.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
St. Louis, Mo	3	17	18	45.35	45.33	$0.4996	$0.4913
St. Paul, Minn	2	7	10	45.43	46.20	.3852	.3759
Salt Lake City, Utah	3	5	5	55.60	55.60	.4234	.4685
San Antonio, Tex	2	2	2	46.00	46.00	.6013	.6013
San Francisco, Cal	2	12	12	45.00	45.00	.6000	.6889
Scranton, Pa	2	2	2	52.00	52.00	.2897	.2897
Seattle, Wash	2	9	13	56.00	48.00	.4321	.5273
Syracuse, N. Y	2	3	3	53.33	53.33	.4454	.4454
Tacoma, Wash	2	3	4	53.33	52.00	.5625	.5469
Terre Haute, Ind	2	2	2	56.00	56.00	.4018	.4018
Toledo, Ohio	2	7	8	48.00	48.00	.4063	.4161
Topeka, Kans	2	2	2	52.00	52.00	.5105	.5105
Washington, D. C	2	7	7	52.57	52.57	.4715	.5049
Wheeling, W. Va	2	3	3	48.00	48.00	.3611	.3611
Worcester, Mass	2	4	4	48.00	48.00	.4323	.4323

STREETS AND SEWERS, CONTRACT WORK.

LABORERS, Male.

Albany, N. Y	2	137	117	55.50	52.77	$0.1673	$0.1963
Atlanta, Ga	2	109	95	60.00	60.00	.1468	.1500
Baltimore, Md	3	485	492	50.41	50.43	.1904	.1909
Boston, Mass	2	425	305	59.79	59.31	.1998	.2021
Buffalo, N. Y	4	540	579	51.36	51.13	.2072	.2284
Charleston, S. C	2	55	33	60.00	60.00	.1124	.1097
Chicago, Ill	3	516	669	56.20	53.89	.2379	.2542
Cincinnati, Ohio	2	299	281	58.54	58.53	.1839	.2023
Cleveland, Ohio	2	130	173	60.00	60.00	.1895	.1901
Dallas, Tex	2	47	63	54.00	51.62	.1820	.2064
Denver, Colo	2	204	239	54.00	54.00	.2425	.2661
Des Moines, Iowa	2	145	170	54.00	54.00	.1944	.2276
Detroit, Mich	2	308	296	60.00	60.00	.1917	.1879
Dubuque, Iowa	2	27	22	59.67	59.55	.2030	.2039
Duluth, Minn	2	309	386	60.00	60.00	.2329	.2317
Grand Rapids, Mich	2	88	74	60.00	60.00	.1751	.1905
Indianapolis, Ind	2	466	180	59.72	58.00	.1993	.2210
Jacksonville, Fla	3	261	185	59.77	60.00	.1537	.1546
Jersey City, N. J	2	70	79	59.00	59.00	.1947	.2063
Kansas City, Mo	2	449	374	57.33	58.72	.1945	.1977
Los Angeles, Cal	2	159	144	60.00	60.00	.2195	.2115
Louisville, Ky	2	118	135	59.58	59.52	.1672	.1790
Lynn, Mass	2	61	39	54.00	54.00	.1921	.1906
Memphis, Tenn	2	392	231	54.92	54.81	.1857	.1765
Milwaukee, Wis	3	207	212	60.00	60.00	.2168	.2284
Montgomery, Ala	2	40	41	60.00	60.00	.1250	.1312
New Haven, Conn	2	457	284	60.00	60.00	.1515	.1659
New Orleans, La	4	635	570	59.49	59.04	.1763	.1907
New York, N. Y. (a)	3	448	439	58.26	58.47	.1697	.1753
Norfolk, Va	2	80	80	60.00	60.00	.1350	.1438
Peoria, Ill	2	112	106	60.00	60.00	.1884	.1844
Philadelphia, Pa	6	1,711	1,885	60.00	60.00	.1498	.1547
Pittsburg, Pa. (b)	2	177	111	60.00	60.00	.1553	.1723
Portland, Oreg	2	167	178	60.00	60.00	.2250	.2500
Providence, R. I	2	434	430	59.65	59.44	.1918	.1921
Racine, Wis	2	66	113	59.45	59.58	.1949	.2113
Richmond, Va	2	58	58	59.22	59.22	.1554	.1534
Rochester, N. Y	2	417	453	48.10	48.00	.2151	.2177
St. Louis, Mo	3	336	363	58.84	59.33	.2310	.2243
Salt Lake City, Utah	2	270	620	48.00	48.00	.2624	.2554
San Francisco, Cal	2	563	385	48.00	48.00	.3153	.3125
Scranton, Pa	2	50	67	52.80	51.94	.1725	.1752
Seattle, Wash	3	149	228	48.40	48.00	.2865	.3090
Sioux Falls, S. Dak	2	64	52	60.00	60.00	.2500	.2500
Syracuse, N. Y	2	98	76	59.41	59.66	.1920	.1936
Tacoma, Wash	2	636	295	49.19	49.83	.2780	.2967
Terre Haute, Ind	2	180	72	55.00	54.00	.1639	.1949
Toledo, Ohio	2	266	212	51.74	51.51	.2255	.2362
Trenton, N. J	2	62	57	60.00	60.00	.1500	.1500
Washington, D. C	2	493	586	53.90	52.37	.1741	.1829
Wheeling, W. Va	2	24	20	54.00	54.00	.1944	.1944
Wilmington, Del	2	86	60	57.56	57.00	.1470	.1564
Worcester, Mass	2	174	160	48.83	48.75	.2192	.2192

a Greater New York.

b Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Continued.

STREETS AND SEWERS, MUNICIPAL WORK.

LABORERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Albany, N. Y.	1	106	99	48.00	48.00	$0.2063	$0.2223
Atlanta, Ga.	1	260	319	60.81	60.72	.1308	.1368
Augusta, Ga.	1	146	146	60.00	60.00	.1091	.1091
Baltimore, Md.	1	305	375	48.00	48.00	.2083	.2083
Boston, Mass.	1	594	977	44.00	44.00	.2758	.2886
Buffalo, N. Y.	1	277	278	48.00	48.00	.1875	.1875
Butte, Mont.	1	89	60	48.00	48.00	.3750	.4375
Charleston, S. C.	1	99	79	60.00	53.00	.1159	.1379
Chicago, Ill.	1	2,243	3,403	48.00	48.00	.2624	.2752
Cincinnati, Ohio.	1	378	476	48.00	48.00	.2197	.2197
Cleveland, Ohio.	1	1,047	1,012	48.00	48.00	.2191	.2192
Dallas, Tex.	1	31	49	48.00	48.00	.2188	.2500
Denver, Colo.	1	125	132	48.00	48.00	.2500	.2813
Des Moines, Iowa.	1	245	244	48.00	48.00	.2538	.2576
Detroit, Mich.	1	664	784	48.00	48.00	.2188	.2188
Dubuque, Iowa.	1	44	106	54.00	54.00	.1687	.1791
Duluth, Minn.	1	68	47	48.00	48.00	.2500	.2500
Evansville, Ind.	1	68	97	48.00	48.00	.1886	.2070
Fall River, Mass.	1	344	330	48.00	48.00	.2500	.2813
Grand Rapids, Mich.	1	107	112	60.00	60.00	.1750	.1924
Harrisburg, Pa.	1	120	135	60.00	54.00	.1500	.1667
Hartford, Conn.	1	156	133	54.00	54.00	.2111	.2125
Houston, Tex.	1	66	94	60.45	60.21	.2000	.2000
Indianapolis, Ind.	1	213	227	48.00	48.00	.2072	.2089
Jacksonville, Fla.	1	170	170	54.00	54.00	.1597	.1597
Jersey City, N. J.	1	66	66	44.00	44.00	.3505	.3536
Kansas City, Mo.	1	190	231	48.00	48.00	.2188	.2188
Little Rock, Ark.	1	18	22	60.00	60.00	.1442	.1505
Los Angeles, Cal.	1	398	359	48.00	48.00	.2500	.2813
Louisville, Ky.	1	257	243	54.00	54.00	.1680	.1944
Lynn, Mass.	1	204	234	48.00	48.00	.2500	.2813
Manchester, N. H.	1	230	240	54.00	54.00	.1806	.1944
Memphis, Tenn.	1	470	470	48.69	50.50	.1854	.1826
Milwaukee, Wis.	1	533	545	48.00	48.00	.2204	.2209
Minneapolis, Minn.	1	2,193	1,950	48.00	48.00	.2500	.2500
Mobile, Ala.	1	46	51	54.00	54.00	.1667	.1944
Montgomery, Ala.	1	54	97	60.00	60.00	.1000	.1021
Nashville, Tenn.	1	174	155	54.00	54.00	.1667	.1944
Newark, N. J.	1	404	486	48.00	48.00	.1802	.2064
New Haven, Conn.	1	130	250	54.00	54.00	.1944	.2222
New Orleans, La.	1	330	330	55.79	55.79	.2120	.2142
New York, N. Y. (a)	1	3,075	3,233	48.00	48.00	.2039	.2695
Norfolk, Va.	1	107	226	54.00	54.00	.1944	.1918
Omaha, Nebr.	1	63	41	48.00	48.00	.2200	.2200
Peoria, Ill.	1	54	52	48.00	48.00	.2211	.2212
Philadelphia, Pa.	1	919	1,130	45.76	45.38	.2161	.2541
Pittsburg, Pa. (b)	1	860	860	48.00	48.00	.2188	.2322
Portland, Me.	1	155	149	54.00	54.00	1944	.1944
Portland, Oreg.	1	136	151	48.00	48.00	.2803	.3125
Providence, R. I.	1	401	345	60.15	54.54	.1568	.1727
Racine, Wis.	1	23	33	54.00	54.00	.1776	.1940
Richmond, Va.	1	114	139	56.00	56.00	.1875	.2143
Rochester, N. Y.	1	400	430	48.00	48.00	.1912	.2035
St. Louis, Mo.	1	1,741	1,497	48.00	48.00	.1875	.1875
St. Paul, Minn.	1	183	195	48.00	48.00	.2000	.2000
Salt Lake City, Utah.	1	170	203	48.00	48.00	.2813	.2813
San Antonio, Tex.	1	126	137	48.00	48.00	.1875	.1875
San Francisco, Cal.	1	50	529	48.00	44.00	.3125	.3750
Scranton, Pa.	1	150	205	48.00	48.00	.1875	.1875
Seattle, Wash.	1	140	160	48.00	48.00	.2813	.3125
Sioux Falls, S. Dak.	1	36	38	60.00	60.00	.2000	.2000
Syracuse, N. Y.	1	275	285	48.00	48.00	.1923	.2097
Tacoma, Wash.	1	175	120	48.00	48.00	.2500	.2813
Terre Haute, Ind.	1	86	51	48.00	48.00	.2000	.2000
Toledo, Ohio.	1	190	175	48.00	48.00	.1977	.2063
Topeka, Kans.	1	50	50	48.00	48.00	.2000	.2188
Trenton, N. J.	1	62	70	60.00	60.00	.1500	.1500
Washington, D. C.	1	965	1,105	48.00	48.00	.1964	.2017
Wheeling, W. Va.	1	51	60	54.00	54.00	.1944	.1944
Wilkes-Barre, Pa.	1	75	81	48.00	48.00	.2029	.2022
Wilmington, Del.	1	282	352	48.00	48.00	.1929	.1925
Worcester, Mass.	1	371	464	48.00	48.00	.2348	.2347

(a) Greater New York. (b) Including Allegheny.

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TABLE IV.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY CITIES—Concluded.

TOBACCO, CIGARS.

CIGAR MAKERS, Male.

Locality.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Boston, Mass	3	307	310	45.00	45.00	$0.4819	$0.4869
Chicago, Ill	2	101	108	48.00	48.00	.3519	.3759
Cleveland, Ohio	3	54	62	44.00	44.00	.3443	.3442
Detroit, Mich	2	36	42	45.11	45.62	.2877	.3231
Indianapolis, Ind	2	38	37	45.79	45.00	.3508	.3583
New York, N. Y. (a)	2	103	101	47.34	47.13	.3533	.3256
Philadelphia, Pa	3	238	269	53.46	53.35	.2657	.3129
Richmond, Va	2	18	15	44.61	44.60	.2971	.2974
Rochester, N. Y	2	32	37	48.00	48.00	.2908	.3028
Tampa, Fla	5	2,250	2,113	60.00	60.00	.3026	.2975

STEMMERS, Female.

Baltimore, Md	2	53	50	53.21	53.76	$0.0883	$0.0900
Boston, Mass	3	78	75	45.00	45.00	.1417	.1564
Chicago, Ill	2	32	33	48.00	48.00	.1423	.1460
Cincinnati, Ohio	3	113	136	51.93	51.79	.1073	.0991
Cleveland, Ohio	3	21	26	44.00	44.00	.1314	.1300
Detroit, Mich	3	104	103	52.02	52.57	.0821	.0890
Louisville, Ky	2	39	26	51.38	52.15	.0808	.0944
Milwaukee, Wis	2	27	17	49.78	49.76	.0866	.0941
New York, N. Y. (a)	8	560	570	55.81	55.30	.1053	.1106
Philadelphia, Pa	3	58	71	46.28	49.35	.0969	.1019
Pittsburg, Pa. (b)	3	74	73	46.47	46.73	.1197	.1306
Rochester, N. Y	2	19	11	51.00	50.73	.1053	.1044
Tampa, Fla	5	186	161	60.00	60.00	.1417	.1360

a Greater New York. b Including Allegheny.

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES.

AGRICULTURAL IMPLEMENTS.

MACHINE WOODWORKERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
California	2	10	13	54.00	54.00	$0.3277	$0.3440
Illinois	7	281	284	58.63	58.69	.2614	.2523
Kentucky	2	25	22	60.00	56.55	.2380	.2453
New York	3	70	51	58.43	58.24	.2106	.2247
Ohio	3	37	40	58.54	58.63	.1964	.2104
Wisconsin	2	16	14	56.25	57.00	.2270	.2444

MACHINISTS, Male.

California	2	57	41	54.00	54.00	$0.3347	$0.3746
Illinois	7	334	323	58.56	58.58	.2836	.2844
New York	3	74	78	59.78	58.46	.2534	.2542
Ohio	3	51	54	58.47	58.46	.2196	.2263
Wisconsin	2	92	120	55.30	55.27	.2788	.2709

MOLDERS, IRON, Male.

California	2	16	23	54.00	54.00	$0.4026	$0.4420
Illinois	7	550	587	58.20	58.22	.2784	.2651
Kentucky	2	10	9	60.00	59.56	.2983	.3101
New York	3	195	147	59.85	58.78	.2638	.2728
Ohio	2	86	85	58.91	58.94	.3157	.3215
Wisconsin	2	71	69	56.18	56.57	.3653	.3522

PAINTERS, Male.

California	2	5	5	54.00	54.00	$0.3385	$0.3722
Illinois	7	252	205	58.70	58.73	.2689	.2748
Kentucky	2	25	22	60.00	56.55	.3225	.3146
New York	3	34	17	59.85	57.06	.2484	.2498
Ohio	3	19	24	58.37	58.33	.2361	.2335
Wisconsin	2	32	24	55.75	56.00	.2935	.3302

BOOTS AND SHOES.

CLOSERS-ON, Female.

Illinois	4	26	26	55.00	55.00	$0.2339	$0.2117
Maine	3	13	11	59.00	59.00	.1750	.1672
Massachusetts	14	98	118	54.61	52.69	.1956	.1940
Minnesota	2	26	28	58.42	58.46	.1825	.1852
Missouri	3	26	36	59.00	58.58	.1811	.2046
New Hampshire	3	33	28	59.55	59.43	.1696	.1916
New York	7	23	23	54.35	54.26	.2106	.1925
Ohio	4	26	27	58.88	58.89	.1587	.1646
Pennsylvania	4	13	13	57.92	57.92	.1610	.1621
Wisconsin	2	9	9	57.78	57.78	.1737	.1797

CUTTERS, OUTSOLE, Male.

Illinois	3	8	7	55.00	55.00	$0.2523	$0.2727
Maine	2	14	12	59.00	59.00	.2252	.2288
Massachusetts	13	63	60	55.67	54.43	.2886	.2999
Minnesota	2	16	23	59.13	59.09	.2252	.2218
Missouri	2	10	12	59.00	59.00	.2878	.2854
New Hampshire	3	15	14	59.40	59.07	.2094	.2148
New York	3	3	3	53.67	53.33	.2753	.2577
Ohio	4	16	17	59.50	59.53	.2499	.2548
Pennsylvania	4	14	15	58.43	58.40	.2187	.2238
Wisconsin	2	11	10	56.36	56.50	.2558	.2739

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

BOOTS AND SHOES—Continued.

CUTTERS, UPPER, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Illinois	4	102	136	55.00	55.00	$0.3013	$0.3292
Maine	3	82	68	59.00	59.00	.2501	.2580
Massachusetts	15	792	697	54.76	54.72	.2910	.3142
Minnesota	2	71	74	59.48	59.46	.2573	.2688
Missouri	3	238	256	59.00	58.02	.2690	.2825
New Hampshire	3	122	105	59.37	59.15	.2455	.2513
New York	7	111	102	55.56	54.99	.3212	.3339
Ohio	4	121	117	56.31	56.32	.3413	.3647
Pennsylvania	4	94	94	57.63	57.72	.2952	.3184
Wisconsin	2	29	27	58.10	58.33	.2455	.2538

EDGE TRIMMERS, Male.

Illinois	4	34	35	55.00	55.00	$0.4450	$0.4839
Maine	3	14	15	59.00	59.00	.2697	.2758
Massachusetts	15	230	193	54.89	54.95	.3849	.4213
Minnesota	2	8	10	59.38	59.40	.2789	.2727
Missouri	3	40	44	59.00	58.20	.3894	.4460
New Hampshire	3	27	31	59.56	59.16	.2919	.2966
New York	6	18	18	54.83	54.61	.4338	.4376
Ohio	4	30	28	59.20	59.14	.3224	.3279
Pennsylvania	4	15	15	58.40	58.40	.3606	.3604
Wisconsin	2	6	6	57.50	57.50	.3066	.3030

GOODYEAR STITCHERS, Male.

Illinois	4	31	32	55.00	55.00	$0.5055	$0.5804
Maine	3	6	9	59.00	58.33	.2826	.2866
Massachusetts	11	164	158	54.60	54.65	.4133	.4073
Minnesota	2	10	11	59.40	59.27	.2916	.3156
Missouri	3	40	37	59.00	57.51	.3204	.3736
New York	7	18	17	56.28	56.24	.3261	.3390
Ohio	4	19	19	58.79	58.79	.3140	.3142
Pennsylvania	4	17	17	58.18	58.18	.2912	.3065
Wisconsin	2	5	5	57.00	57.00	.3612	.3542

LASTERS, MACHINE, Male.

Illinois	4	197	206	55.00	55.00	$0.3336	$0.3385
Maine	3	53	47	59.00	59.00	.2395	.2423
Massachusetts	14	303	332	55.78	54.90	.3504	.3464
Minnesota	2	11	16	59.45	59.31	.2898	.2864
Missouri	3	89	112	59.00	57.17	.3037	.3228
New Hampshire	3	101	78	59.31	59.19	.2573	.2528
New York	7	28	28	54.36	54.21	.3307	.3445
Ohio	4	74	75	59.05	59.00	.3155	.3108
Pennsylvania	4	90	101	57.07	56.84	.2277	.2549
Wisconsin	2	16	14	56.88	56.43	.2898	.3149

TREERS, Male.

Illinois	4	59	65	55.00	55.00	$0.3120	$0.3436
Maine	3	14	13	59.00	59.00	.2595	.2645
Massachusetts	13	407	351	54.68	54.88	.2549	.2927
Minnesota	2	11	13	59.36	59.38	.2013	.2260
Missouri	3	44	57	59.00	57.86	.2274	.2339
New Hampshire	2	60	63	59.72	59.40	.1667	.1719
New York	2	5	5	55.00	54.20	.1895	.2265
Ohio	2	8	9	58.75	58.33	.2035	.1906
Pennsylvania	2	7	7	58.00	58.00	.2572	.2693
Wisconsin	2	12	11	58.75	58.64	.2247	.2444

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

BOOTS AND SHOES—Concluded.

VAMPERS, Female.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Illinois	4	55	55	55.00	55.00	$0.2173	$0.2355
Maine	3	21	9	59.00	59.00	.2071	.2250
Massachusetts	15	283	221	55.32	55.05	.2534	.2601
Minnesota	2	30	26	55.17	55.73	.2044	.2100
Missouri	3	86	71	59.00	58.30	.2390	.2493
New Hampshire	3	45	37	59.47	58.00	.2244	.2251
New York	6	38	38	54.66	54.55	.2317	.2486
Ohio	4	88	87	59.31	59.32	.1842	.2008
Pennsylvania	4	38	38	57.66	57.66	.1964	.1984
Wisconsin	2	11	11	57.73	57.73	.2251	.2237

CARRIAGES AND WAGONS.

BLACKSMITHS, Male.

Connecticut	2	8	8	57.00	57.00	$0.3226	$0.3145
Georgia	2	7	5	60.00	60.00	.2542	.2650
Illinois	2	33	36	57.55	57.50	.2938	.2964
Indiana	6	104	113	57.18	57.33	.2459	.2551
Iowa	2	6	6	54.00	54.00	.2963	.2870
Kentucky	3	39	38	59.85	59.13	.2036	.2197
Massachusetts	3	16	15	55.63	55.80	.2889	.2850
Michigan	3	31	31	59.90	59.94	.2404	.2500
Missouri	2	14	16	60.00	60.00	.2524	.2667
New Jersey	3	18	16	58.00	56.75	.2861	.2942
New York	9	66	61	55.55	56.16	.3180	.3102
North Carolina	3	14	12	60.00	60.00	.1593	.1763
Ohio	9	113	115	58.10	56.43	.2620	.2653
Pennsylvania	6	52	57	56.69	56.96	.2819	.2752
Tennessee	2	4	5	58.75	59.00	.2917	.2933
Virginia	3	10	9	58.00	57.78	.2484	.2761
Wisconsin	3	36	49	59.11	59.12	.2699	.2781

BODY MAKERS, CARRIAGE, Male.

Indiana	4	75	83	56.63	56.87	$0.2601	$0.2674
Iowa	3	7	6	58.29	58.00	.2405	.2570
Kentucky	2	29	32	59.86	59.00	.1859	.1846
Massachusetts	3	19	17	55.21	55.12	.3168	.3328
Michigan	2	53	39	59.92	59.95	.2450	.2451
Missouri	2	10	10	60.00	60.00	.2575	.2700
New York	9	224	228	54.16	54.46	.3181	.3203
Ohio	6	54	81	58.48	56.41	.2601	.2929
Pennsylvania	6	66	69	56.88	56.78	.2811	.2909
Wisconsin	2	13	19	59.15	59.26	.2289	.2566

MACHINE WOODWORKERS, Male.

Illinois	2	36	36	57.75	57.64	$0.2240	$0.2311
Indiana	5	194	266	57.37	57.79	.1923	.1925
Kentucky	2	25	29	59.88	59.00	.1704	.1763
Michigan	2	49	39	59.98	59.97	.2021	.2106
New York	5	57	53	58.39	58.36	.2346	.2350
Ohio	5	116	107	56.99	54.56	.1860	.2083
Pennsylvania	2	20	20	58.50	58.75	.2017	.2010
Wisconsin	3	51	52	59.16	59.13	.2047	.2226

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

CARRIAGES AND WAGONS—Concluded.

PAINTERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Connecticut	2	17	17	56.47	56.82	$0.2944	$0.2569
Georgia	2	22	17	60.00	60.00	.2206	.2260
Illinois	2	86	82	57.24	57.57	.3300	.3382
Indiana	6	379	387	57.76	57.97	.2286	.2420
Iowa	3	16	11	55.13	55.64	.2501	.2427
Kentucky	3	52	56	59.81	59.25	.2539	.2273
Massachusetts	3	42	38	55.43	55.21	.2479	.2575
Michigan	3	97	98	59.94	59.96	.2751	.2734
Missouri	2	33	34	60.00	60.00	.2333	.2419
New Jersey	3	24	25	58.33	57.64	.2243	.2320
New York	10	311	296	55.28	55.23	.2556	.2688
North Carolina	3	18	20	60.00	60.00	.1668	.1666
Ohio	9	307	297	58.24	56.46	.2757	.2940
Pennsylvania	7	65	63	57.22	57.41	.2456	.2491
Tennessee	2	15	9	60.00	58.33	.2483	.2750
Virginia	3	26	31	56.35	55.97	.2032	.2019
Wisconsin	3	78	81	59.24	59.17	.2538	.2946

TRIMMERS, CARRIAGE, Male.

Georgia	2	12	7	60.00	60.00	$0.2457	$0.2691
Indiana	6	44	42	56.41	56.55	.2677	.2839
Iowa	3	8	8	57.00	57.00	.2580	.2580
Kentucky	2	26	23	60.00	59.26	.2537	.2549
Massachusetts	3	17	16	54.41	54.50	.3317	.3308
Michigan	3	42	44	59.95	59.98	.2700	.2691
Missouri	2	14	14	60.00	60.00	.2369	.2637
North Carolina	2	7	8	60.00	60.00	.1950	.1956
New York	10	122	106	55.34	55.74	.2957	.2949
Ohio	6	92	102	59.38	56.47	.2908	.3004
Pennsylvania	5	26	22	59.77	59.73	.2182	.2341
Virginia	3	11	14	56.36	56.07	.2492	.2789
Wisconsin	2	16	19	59.81	59.63	.1776	.2274

CARS, STEAM RAILROAD.

BLACKSMITHS, Male.

California	3	158	161	54.00	54.00	$0.3494	$0.3875
Illinois	6	235	239	55.42	55.38	.3491	.3676
Indiana	4	60	62	57.22	55.19	.2759	.2988
Maryland	2	81	88	55.00	55.00	.2687	.2856
Minnesota	2	58	64	55.07	56.84	.3090	.3343
Missouri	4	99	97	57.10	55.55	.3016	.3064
New York	3	56	53	57.21	57.17	.2712	.3062
Ohio	3	110	116	56.55	56.79	.2828	.3055
Pennsylvania	2	100	84	56.35	56.55	.3224	.3500
Tennessee	2	15	16	60.00	60.00	.2653	.2803
Texas	2	67	51	59.67	56.71	.3268	.3631
Virginia	2	28	28	59.32	59.32	.2814	.2932

BOILER MAKERS, Male.

California	2	103	103	54.00	54.00	$0.3808	$0.4112
Illinois	5	200	237	58.01	57.93	.3420	.3631
Indiana	3	79	100	57.97	57.40	.2899	.3196
Maryland	2	91	93	55.00	55.00	.2557	.2696
Minnesota	2	61	66	55.31	56.82	.3621	.3824
Missouri	3	93	56	58.58	53.04	.3341	.3569
New York	2	83	83	56.24	56.17	.2775	.3051
Ohio	2	57	51	55.05	55.41	.3160	.3198
Texas	2	36	38	59.81	60.00	.3504	.3808

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

CARS, STEAM RAILROAD—Continued.

CABINETMAKERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Delaware	2	61	54	54.00	54.00	$0.2457	$0.2944
Illinois	3	378	397	54.26	54.19	.3498	.3578
Maryland	2	27	21	55.00	55.00	.2284	.2429
Minnesota	2	15	16	57.40	56.94	.2567	.2762
Missouri	2	37	21	57.78	58.76	.2843	.2755
Ohio	2	148	168	57.41	57.26	.2955	.2842

CARPENTERS, Male.

California	3	29	23	54.00	54.00	$0.3443	$0.3435
Delaware	2	204	212	54.00	54.00	.2439	.2856
Illinois	6	1,316	1,650	56.26	56.40	.3263	.3243
Indiana	4	200	200	57.53	55.35	.2785	.3313
Maryland	2	214	148	55.00	55.00	.2110	.2253
Minnesota	2	317	363	57.94	57.85	.2245	.2416
Missouri	4	462	580	55.94	56.78	.2662	.2615
New York	3	395	396	55.52	55.58	.2633	.2952
Ohio	3	536	588	57.90	57.85	.3062	.3339
Pennsylvania	2	587	612	56.54	56.68	.3001	.2858
Tennessee	2	29	43	60.00	60.00	.1986	.2076
Texas	2	115	112	56.90	60.00	.2910	.3078
Virginia	2	155	144	59.06	59.05	.2105	.2213

CAR REPAIRERS, Male.

California	2	527	673	54.00	54.00	$0.2616	$0.2807
Illinois	6	627	802	57.43	57.50	.2125	.2253
Indiana	3	82	133	57.40	55.04	.2055	.2218
Maryland	2	581	669	55.00	55.00	.1908	.1921
Missouri	2	88	85	49.91	48.85	.2413	.2761
New York	2	58	139	56.28	57.84	.1815	.1793
Ohio	2	448	416	56.29	56.60	.2327	.2300
Pennsylvania	2	474	508	55.69	56.19	.3288	.3020
Texas	2	325	306	59.63	60.00	.2169	.2423
Virginia	2	235	238	59.17	59.16	.1600	.1725

LABORERS, Male.

California	3	458	280	54.00	54.00	$0.2045	$0.2018
Delaware	2	156	159	54.00	54.00	.1490	.1513
Illinois	6	2,720	3,270	54.95	55.04	.1708	.1730
Indiana	4	307	385	56.24	54.44	.1446	.1527
Maryland	2	233	321	55.00	55.00	.1414	.1473
Minnesota	2	137	200	56.68	57.44	.1671	.1713
Missouri	4	734	767	58.01	57.59	.1501	.1523
New York	3	403	323	55.91	57.07	.1434	.1574
Ohio	3	776	797	57.50	57.54	.1498	.1498
Pennsylvania	2	699	790	57.95	57.97	.1368	.1452
Tennessee	2	84	102	60.00	60.00	.1182	.1298
Texas	2	394	559	59.73	60.00	.1499	.1630
Virginia	2	219	177	59.52	59.53	.1204	.1272

MACHINE WOODWORKERS, Male.

Delaware	2	80	94	54.00	54.00	$0.2593	$0.2887
Illinois	5	337	344	54.47	54.87	.2896	.2944
Indiana	3	36	48	58.08	57.08	.2349	.2847
Maryland	2	47	47	55.00	55.00	.2278	.2201
Minnesota	2	30	36	57.30	57.17	.2287	.2350
Missouri	4	101	99	57.64	57.73	.2379	.2533
New York	3	59	55	56.52	56.73	.2258	.2639
Ohio	3	213	224	57.33	57.42	.2181	.2224
Pennsylvania	2	88	95	56.25	56.32	.2951	.3108
Tennessee	2	11	11	60.00	60.00	.1986	.2127
Texas	2	24	28	56.75	60.00	.2718	.2904
Virginia	2	17	19	59.29	59.32	.2344	.2366

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

CARS, STEAM RAILROAD—Concluded.

MACHINISTS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
California	3	365	400	54.00	54.00	$0.3574	$0.3894
Delaware	2	13	15	54.00	54.00	.2531	.2778
Illinois	6	925	1,001	56.50	56.42	.3362	.3555
Indiana	4	227	280	55.64	53.81	.2902	.3233
Maryland	2	446	416	55.00	55.00	.2791	.2945
Minnesota	2	263	259	55.09	57.20	.3477	.3683
Missouri	4	348	305	57.97	53.30	.3259	.3558
New York	3	98	113	59.33	59.15	.2472	.2596
Ohio	3	277	351	55.96	55.80	.2875	.2956
Pennsylvania	2	100	125	58.20	57.96	.2697	.2793
Tennessee	2	78	100	60.00	60.00	.2897	.3150
Texas	2	155	186	56.10	60.00	.3378	.3717
Virginia	2	144	144	59.44	59.45	.2925	.3136

PAINTERS, Male.

California	3	98	115	54.00	54.00	$0.2905	$0.3092
Delaware	2	102	110	54.00	54.00	.2658	.2889
Illinois	6	378	442	55.03	55.20	.3178	.3243
Indiana	4	33	39	56.73	55.08	.2363	.2626
Maryland	2	107	131	55.00	55.00	.2394	.2204
Minnesota	2	95	97	57.42	57.18	.2347	.2436
Missouri	4	118	104	57.66	58.11	.2759	.2574
New York	3	119	120	54.50	54.75	.3711	.4281
Ohio	3	218	191	57.10	57.16	.2588	.2357
Pennsylvania	2	217	188	56.75	56.33	.3191	.3305
Texas	2	44	54	57.64	60.00	.2763	.2921
Virginia	2	45	42	59.36	59.31	.2092	.2202

UPHOLSTERERS, Male.

California	2	30	29	54.00	54.00	$0.3025	$0.3293
Delaware	2	14	8	54.00	54.00	.2821	.2865
Illinois	3	97	120	54.22	54.38	.3665	.3749
Indiana	2	4	3	56.00	53.33	.2303	.2547
Maryland	2	23	23	55.00	55.00	.2151	.2157
Minnesota	2	16	14	56.75	56.64	.2351	.2631
Missouri	2	13	14	56.69	58.29	.2773	.2532
New York	2	13	13	54.46	54.46	.2477	.3614
Ohio	2	48	46	57.00	57.04	.2673	.2802
Texas	2	7	10	55.43	60.00	.2964	.3105
Virginia	2	8	6	59.50	59.67	.2256	.2875

COTTON GOODS.

CARDING-MACHINE TENDERS, Male.

Alabama	3	36	43	65.83	65.79	$0.0895	$0.0941
Georgia	6	61	55	66.00	64.53	.0799	.0954
Maine	3	34	33	60.00	60.00	.1196	.1304
Massachusetts	5	113	108	58.00	58.00	.1287	.1466
New Hampshire	2	107	107	60.00	58.00	.1267	.1368
North Carolina	4	23	23	63.87	61.70	.0654	.1005
Pennsylvania	2	12	12	60.00	60.00	.1455	.1469
Rhode Island	2	29	26	58.00	58.00	.1275	.1494
South Carolina	4	59	62	65.34	63.29	.0961	.1144

LOOM FIXERS, Male.

Alabama	3	50	57	65.76	65.79	$0.1621	$0.1621
Georgia	6	71	75	66.00	64.17	.1457	.1601
Maine	3	67	69	60.00	57.10	.2075	.2304
Massachusetts	5	187	183	58.00	58.00	.2295	.2642
New Hampshire	2	294	297	60.00	58.00	.2194	.2428
North Carolina	7	89	85	64.69	62.71	.1416	.1523
Pennsylvania	2	18	17	60.00	60.00	.1656	.1610
Rhode Island	2	55	60	58.00	58.00	.2169	.2540

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

COTTON GOODS—Concluded.

SPINNERS, FRAME, Female.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Alabama	3	240	284	65.54	65.63	$0.0619	$0.0650
Georgia	6	352	352	66.00	64.23	.0747	.0859
Maine	3	200	207	60.00	60.00	.1088	.1193
Massachusetts	5	972	976	58.00	58.00	.1221	.1407
New Hampshire	2	776	817	60.00	58.00	.1039	.1192
North Carolina	4	107	110	64.08	61.87	.0740	.0885
Pennsylvania	2	55	55	60.00	60.00	.0982	.1018
Rhode Island	2	123	112	58.00	58.00	.1097	.1348
South Carolina	4	265	249	65.65	63.20	.0787	.0977

SPINNERS, MULE, Male.

Maine	3	29	31	60.00	60.00	$0.2192	$0.2452
Massachusetts	2	46	48	58.00	58.00	.2156	.2407
Rhode Island	2	48	50	58.00	58.00	.2032	.2372

WEAVERS, Male.

Alabama	3	160	166	65.19	65.12	$0.1108	$0.1125
Georgia	5	371	330	66.00	64.55	.1090	.1244
Maine	3	159	219	60.00	60.00	.1748	.1923
Massachusetts	5	1,186	1,185	58.00	58.00	.1740	.2012
North Carolina	4	159	145	64.64	62.01	.1185	.1389
Pennsylvania	2	54	81	60.00	60.00	.1339	.1377
Rhode Island	2	298	298	58.00	58.00	.1646	.1919
South Carolina	4	327	313	65.52	63.19	.1114	.1242

WEAVERS, Female.

Alabama	3	201	210	64.60	64.82	$0.0911	$0.0855
Georgia	5	422	417	66.00	63.95	.0951	.1127
Maine	3	468	459	60.00	60.00	.1474	.1612
Massachusetts	5	1,708	1,645	58.00	58.00	.1559	.1760
North Carolina	4	113	115	65.14	61.71	.0941	.1135
Pennsylvania	2	202	183	60.00	60.00	.1313	.1364
Rhode Island	2	373	462	58.00	58.00	.1505	.1691
South Carolina	4	156	160	65.54	63.34	.0999	.1130

DYEING, FINISHING, AND PRINTING TEXTILES.

BLEACHERS, Male.

Massachusetts	4	113	104	58.00	58.00	$0.1214	$0.1340
New Jersey	3	48	54	58.65	58.61	.1464	.1461
Pennsylvania	2	16	23	60.00	60.00	.1672	.1703
Rhode Island	5	245	221	58.55	58.30	.1252	.1323

CALENDRERS, Male.

Massachusetts	4	25	29	58.00	58.00	$0.1342	$0.1398
New Jersey	3	57	63	58.67	58.67	.1562	.1567
Pennsylvania	3	29	28	60.00	60.00	.1569	.1586
Rhode Island	5	199	218	59.11	58.87	.1391	.1440

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

DYEING, FINISHING, AND PRINTING TEXTILES—Concluded.

DYERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wage per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Massachusetts	4	163	235	58.00	58.09	$0.1322	$0.1393
New Jersey	3	40	32	58.70	58.78	.1436	.1513
Pennsylvania	5	107	107	60.00	60.00	.1815	.1806
Rhode Island	5	175	162	58.45	58.28	.1378	.1455

PRINTERS, Male.

Massachusetts	3	41	39	58.00	58.00	$0.4362	$0.4344
New Jersey	2	16	19	59.19	59.21	.3660	.3650
Pennsylvania	2	14	14	60.00	60.00	.4856	.4703
Rhode Island	3	29	28	57.07	57.14	.4904	.5112

FLOUR.

BOLTERS, Male.

California	3	5	6	63.60	63.00	$0.3009	$0.3000
Illinois	2	4	4	66.00	66.00	.2188	.2188
Kansas	2	5	5	72.00	72.00	.1792	.1792
Michigan	3	13	13	65.54	65.54	.1857	.1844
Minnesota	4	49	57	48.94	48.81	.3464	.3476
Missouri	2	6	6	72.00	72.00	.1630	.1778
New York	2	12	12	69.00	69.00	.2589	.2623
Tennessee	2	9	9	72.00	72.00	.1482	.1482
Texas	2	7	7	72.00	72.00	.1516	.1675
Virginia	2	8	8	72.00	72.00	.1250	.1363
Wisconsin	3	6	6	64.00	64.00	.2444	.2574

MILLERS, Male.

California	3	7	8	64.29	64.50	$0.4117	$0.3891
Illinois	3	10	10	72.00	72.00	.2472	.2423
Indiana	3	8	8	70.50	70.50	.2434	.2434
Kansas	2	3	3	72.00	72.00	.2500	.2500
Michigan	3	8	9	67.50	67.33	.2188	.2236
Minnesota	4	71	77	48.65	48.60	.3494	.3491
Missouri	3	7	8	72.00	72.00	.2520	.2656
New York	6	22	22	67.09	67.09	.2454	.2503
Ohio	4	75	91	72.00	72.00	.1844	.1856
Pennsylvania	2	7	4	63.43	66.00	.2865	.2889
Tennessee	2	8	8	72.00	72.00	.2474	.2474
Texas	2	3	3	72.00	72.00	.2822	.2822
Virginia	2	5	5	69.60	69.60	.2016	.2033
Wisconsin	3	10	11	64.80	64.36	.2233	.2263

MILLWRIGHTS, Male.

California	3	3	3	64.00	64.00	$0.3454	$0.3786
Illinois	3	5	5	60.00	60.00	.3100	.3200
Kansas	2	2	2	71.00	71.00	.2827	.3036
Michigan	3	3	3	58.00	58.00	.2509	.2735
Minnesota	4	58	44	60.00	59.09	.2996	.3103
Missouri	3	4	4	63.00	63.00	.2880	.2784
New York	4	9	9	57.33	57.33	.4333	.4333
Ohio	2	15	23	60.00	60.00	.2633	.2772
Tennessee	2	10	5	60.00	60.00	.2700	.2880
Texas	2	2	2	60.00	60.00	.3625	.3750
Virginia	2	2	2	60.00	60.00	.2875	.3000
Wisconsin	3	4	4	60.00	60.00	.2038	.3063

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

HARNESS.

COLLAR MAKERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Illinois	3	52	48	55.19	55.21	$0.2412	$0.2320
Indiana	2	58	56	55.47	54.20	.2570	.2559
Iowa	2	10	10	59.80	59.80	.2434	.2384
Maryland	2	20	19	58.70	55.58	.1927	.2118
Massachusetts	2	5	5	53.00	53.00	.3170	.3245
Minnesota	2	19	21	59.00	58.05	.2306	.2286
Missouri	2	21	28	57.38	58.04	.2558	.2627
New York	3	13	11	56.61	56.55	.2886	.2867
Ohio	3	40	34	55.20	55.47	.2411	.2420
Pennsylvania	2	9	9	51.11	51.11	.3177	.3097
Tennessee	2	9	8	56.22	56.50	.2591	.2362
Texas	2	8	9	59.00	59.00	.2383	.2599

CUTTERS, Male.

California	3	4	3	54.00	54.00	$0.4167	$0.4074
Georgia	2	2	2	54.00	54.00	.3797	.4153
Illinois	5	24	19	55.21	54.74	.2968	.3118
Indiana	3	17	19	56.71	55.68	.2635	.2692
Iowa	2	6	8	59.50	59.50	.2435	.2372
Maryland	2	16	16	58.69	55.56	.2083	.2173
Minnesota	3	15	16	59.00	58.69	.2542	.2684
Missouri	4	31	31	56.61	56.61	.2902	.2923
New Jersey	3	3	4	56.00	55.50	.2975	.3019
New York	7	8	8	55.75	55.50	.3011	.2997
Ohio	4	38	32	54.95	55.13	.2636	.2669
Oregon	2	8	7	54.00	54.00	.3380	.3545
Tennessee	2	12	10	57.33	57.00	.2840	.3052
Texas	2	21	19	59.00	59.00	.2760	.2743

HARNESS MAKERS, Male.

California	2	23	19	54.00	54.00	$0.3290	$0.3517
Georgia	2	12	12	54.00	54.00	.2392	.2400
Indiana	2	100	91	55.87	53.41	.2427	.2481
Iowa	2	24	24	59.88	59.83	.2122	.2112
Massachusetts	2	31	16	53.00	53.00	.2855	.2931
Minnesota	2	11	10	59.00	59.00	.2081	.2393
Missouri	3	56	61	57.59	57.79	.2612	.2665
Ohio	3	81	93	54.00	54.00	.2802	.2636
Pennsylvania	2	11	10	60.00	60.00	.2406	.2426
Tennessee	2	24	27	58.17	57.70	.2634	.2671

STITCHERS, HAND, Male.

Illinois	2	9	7	55.00	52.14	$0.2093	$0.2175
Massachusetts	2	9	6	53.00	53.00	.2390	.2422
New Jersey	2	12	9	54.00	54.00	.2309	.2393
New York	5	31	26	54.84	54.19	.2172	.2283

STITCHERS, MACHINE, Male.

California	3	5	4	54.00	54.00	$0.3722	$0.3820
Illinois	5	28	23	55.18	54.57	.2790	.2895
Indiana	3	19	24	56.68	55.67	.2492	.2515
Iowa	2	3	4	59.67	59.50	.2485	.2559
Maryland	2	10	9	58.70	55.11	.2183	.2546
Minnesota	3	16	17	59.00	58.59	.2548	.2501
Missouri	3	26	27	56.54	56.67	.2859	.2855
New Jersey	2	2	2	54.00	54.00	.2963	.3148
Ohio	5	26	29	55.15	54.83	.2600	.2579
Oregon	2	7	7	54.00	54.00	.3311	.3546
Tennessee	2	6	6	57.33	57.33	.2675	.2618
Texas	2	13	14	59.00	59.00	.2719	.2706

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

HATS, FUR.

FINISHERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Connecticut	2	100	119	54.50	55.21	$0.3317	$0.3277
New Jersey	4	279	282	50.38	50.37	.3823	.3768
New York	2	156	151	58.49	55.00	.3155	.3103
Pennsylvania	5	323	421	54.86	54.69	.2911	.2982

SIZERS, Male.

Connecticut	2	111	109	54.68	54.59	$0.3504	$0.3911
New Jersey	4	341	313	50.29	50.35	.3469	.3598
New York	2	198	193	57.96	55.00	.2748	.2848
Pennsylvania	5	543	573	54.81	54.84	.2595	.2754

TRIMMERS, Female.

Connecticut	2	108	130	53.98	54.00	$0.1655	$0.1629
New Jersey	4	233	244	50.41	50.37	.1847	.1993
New York	2	338	349	57.77	55.00	.1369	.1416
Pennsylvania	5	527	589	54.45	54.56	.1257	.1290

HOSIERY AND KNIT GOODS.

FINISHERS, Female.

Georgia	2	22	22	58.32	58.45	$0.0915	$0.1217
Illinois	3	48	42	55.38	55.17	.1399	.1567
New York	8	392	388	59.53	59.64	.1469	.1492
North Carolina	2	70	70	66.00	66.00	.0849	.1000
Pennsylvania	3	91	85	59.73	58.32	.1226	.1291
Wisconsin	3	200	184	59.68	58.10	.1055	.1052

KNITTERS, Female.

Georgia	2	66	72	58.18	58.13	$0.1048	$0.1129
Illinois	2	103	109	50.48	50.48	.1256	.1244
Massachusetts	2	95	96	55.82	56.00	.1406	.1417
New York	5	83	72	59.13	58.83	.1149	.1216
Pennsylvania	4	236	181	59.68	58.55	.1427	.1450
Wisconsin	3	167	154	59.91	59.88	.0948	.1056

LEATHER.

FLESHERS, Male.

California	2	10	10	54.00	54.00	$0.2686	$0.2686
Delaware	2	11	16	60.00	60.00	.1728	.1854
Illinois	3	12	9	59.00	59.00	.1977	.2043
Kentucky	4	13	13	59.54	59.54	.1985	.1978
Massachusetts	3	15	17	59.00	59.00	.1842	.1804
Michigan	3	11	10	59.45	59.50	.1857	.1907
New Jersey	5	35	36	58.17	58.17	.2341	.2326
New York	4	16	17	59.50	59.47	.1769	.1788
Ohio	3	10	10	57.60	57.60	.2208	.2208
Pennsylvania	12	64	48	59.38	59.44	.1870	.1902
Virginia	7	44	43	60.00	60.00	.1583	.1595
West Virginia	2	7	8	60.00	60.00	.1714	.1813
Wisconsin	5	36	39	60.03	59.90	.1919	.2008

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

LEATHER—Continued.

GLAZERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Delaware	2	60	97	60.00	60.00	$0.1877	$0.1873
Massachusetts	4	172	159	59.00	59.00	.1716	.1742
New York	5	21	19	59.19	59.21	.1639	.1649
Pennsylvania	4	373	291	59.44	59.68	.1694	.1760

LIMERS, Male.

California	3	16	13	54.94	54.69	$0.2406	$0.2473
Delaware	2	34	27	60.00	60.00	.1696	.1704
Illinois	2	18	10	59.00	59.00	.1544	.1856
Kentucky	4	16	14	59.88	59.88	.1357	.1538
Massachusetts	3	77	70	59.00	59.00	.1598	.1600
Michigan	3	10	11	59.30	59.27	.1745	.1779
New Jersey	4	19	19	57.21	57.21	.2161	.2160
New York	6	32	34	59.50	59.50	.1676	.1702
Ohio	3	9	9	58.67	58.67	.1916	.1916
Pennsylvania	10	106	73	59.19	58.96	.1928	.2021
Virginia	6	27	29	60.00	60.00	.1302	.1323
West Virginia	2	11	11	60.00	60.00	.1582	.1595
Wisconsin	5	60	62	59.87	59.89	.1721	.1815

SETTERS OUT, Male.

California	3	18	16	54.67	54.75	$0.2622	$0.2681
Delaware	2	18	24	60.00	60.00	.1398	.1420
Illinois	2	16	17	59.00	59.00	.2245	.2447
Massachusetts	4	77	67	59.00	59.00	.1698	.1703
Michigan	2	23	23	54.43	54.43	.2345	.2398
New Jersey	3	50	41	59.00	59.00	.1707	.1731
New York	6	52	47	59.38	59.34	.1963	.1982
Ohio	3	26	26	56.31	56.31	.2519	.2596
Pennsylvania	8	105	74	59.25	59.32	.1954	.2047
Wisconsin	4	94	98	59.93	59.92	.2058	.2133

STAKERS, Male.

Delaware	2	44	58	60.00	60.00	$0.1847	$0.1807
Illinois	2	25	14	59.00	59.00	.1685	.1900
Massachusetts	4	107	103	59.00	59.00	.1752	.1758
New York	3	15	17	59.00	59.00	.1538	.1576
Pennsylvania	4	245	205	59.62	59.80	.2304	.2309
Wisconsin	4	31	45	59.87	59.91	.1705	.1836

TANYARD HANDS, Male.

California	3	32	37	54.47	54.41	$0.2277	$0.2412
Delaware	2	51	49	60.00	60.00	.1332	.1360
Illinois	3	33	38	59.00	59.00	.1795	.1816
Kentucky	3	16	14	60.00	60.00	.1424	.1520
Massachusetts	3	73	74	59.00	59.00	.1602	.1605
Michigan	2	36	36	59.86	59.86	.1794	.1808
New Jersey	5	74	64	57.93	57.77	.1742	.1758
New York	5	43	44	59.77	59.77	.1607	.1658
Ohio	3	36	36	57.83	57.83	.1740	.1802
Pennsylvania	12	172	134	59.21	59.28	.1630	.1683
Virginia	7	142	142	60.00	60.00	.1304	.1333
West Virginia	2	24	23	60.00	60.00	.1596	.1665
Wisconsin	5	181	159	59.94	59.91	.1674	.1739

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

LEATHER—Concluded.

UNHAIRERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
California	3	26	23	54.92	55.04	$0.2505	$0.2536
Delaware	2	40	35	60.00	60.00	.1692	.1833
Illinois	3	24	8	59.00	59.00	.2002	.2023
Kentucky	2	7	7	60.00	60.00	.1498	.1641
Massachusetts	2	57	52	59.00	59.00	.1768	.1750
Michigan	2	5	5	59.80	59.80	.1806	.1840
New Jersey	4	31	27	58.35	58.11	.2087	.2129
New York	6	19	19	59.26	59.26	.1660	.1709
Ohio	3	7	7	56.57	56.57	.2097	.2043
Pennsylvania	12	86	58	59.08	58.95	.2449	.2059
Virginia	7	49	47	60.00	60.00	.1435	.1439
West Virginia	2	8	5	60.00	60.00	.1525	.1800
Wisconsin	5	33	34	59.79	59.79	.1978	.2215

LUMBER.

CARRIAGE MEN, Male.

Alabama	3	9	8	60.00	60.00	$0.1683	$0.1781
Arkansas	5	30	30	61.20	60.00	.1998	.2035
California	3	12	10	60.00	60.00	.2474	.2469
Florida	5	21	21	61.52	58.86	.1751	.1776
Georgia	2	3	3	64.00	64.00	.1407	.1559
Indiana	2	6	6	60.00	60.00	.1736	.1770
Iowa	4	22	18	61.64	62.00	.2176	.2365
Louisiana	6	23	23	61.57	61.57	.1913	.2026
Maine	2	11	11	60.00	60.00	.2804	.2955
Michigan	6	28	28	60.00	60.00	.2198	.2336
Minnesota	4	28	30	60.00	60.00	.3179	.3183
Missouri	3	14	14	60.00	60.00	.1893	.1875
North Carolina	3	10	11	63.00	62.55	.1339	.1526
Ohio	2	7	7	60.00	60.00	.1986	.2393
Oregon	3	21	18	60.00	60.00	.2479	.2094
Pennsylvania	4	11	11	60.00	60.00	.2509	.2564
South Carolina	3	14	14	61.50	61.50	.1564	.1536
Tennessee	2	11	9	60.00	60.00	.1864	.2117
Texas	2	15	15	60.00	60.00	.2233	.2800
Washington	4	32	30	60.00	60.00	.2355	.2545
Wisconsin	6	38	38	60.00	60.00	.2211	.2259

CHOPPERS AND SAWYERS, IN WOODS, Male.

Arkansas	3	45	45	61.33	61.33	$0.2000	$0.1871
California	3	155	149	61.63	61.69	.2814	.2827
Florida	4	118	124	60.00	60.00	.1552	.1607
Georgia	2	19	18	58.74	59.00	.1950	.1772
Michigan	4	280	340	62.26	62.84	.1606	.1634
Minnesota	3	1,229	1,240	60.00	60.00	.1886	.2036
North Carolina	2	21	26	69.43	68.77	.1086	.1140
Oregon	2	75	119	60.00	60.00	.3427	.3538
South Carolina	2	46	46	66.00	66.00	.1072	.1072
Washington	2	86	53	62.79	64.30	.2744	.3111
Wisconsin	5	307	415	60.00	60.00	.1796	.1718

LABORERS, Male.

Alabama	3	148	122	60.00	60.00	$0.1366	$0.1467
Arkansas	5	559	534	60.93	60.00	.1597	.1654
California	2	210	198	60.00	60.00	.2089	.2134
Florida	5	648	679	60.11	59.03	.1449	.1472
Georgia	2	59	57	64.37	64.42	.1165	.1164
Indiana	2	46	46	60.00	60.00	.1409	.1420
Iowa	4	345	335	62.17	61.06	.1683	.1733
Louisiana	6	576	534	62.29	62.34	.1408	.1524
Maine	2	160	145	60.00	60.00	.1641	.1776
Michigan	6	433	442	60.08	60.08	.1664	.1751

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

LUMBER—Concluded.

LABORERS, Male—Concluded.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Minnesota	4	540	541	60.00	60.00	$0.2070	$0.2100
Missouri	3	411	407	60.00	60.00	.1554	.1657
North Carolina	3	155	170	61.16	61.13	.1107	.1227
Ohio	2	169	70	60.00	60.00	.1771	.1637
Oregon	3	486	543	60.00	60.00	.2286	.2389
Pennsylvania	3	47	50	60.00	60.00	.1848	.1867
South Carolina	3	109	110	61.65	61.63	.1052	.1044
Tennessee	2	394	323	60.00	60.00	.1404	.1505
Texas	2	166	173	60.00	60.00	.1916	.1976
Washington	4	1,352	1,051	60.00	60.00	.2039	.2187
Wisconsin	6	520	626	60.00	60.00	.1683	.1764
SAWYERS, BAND, Male.							
Arkansas	5	11	11	61.09	60.00	$0.6273	$0.6391
California	2	6	5	60.00	60.00	.4016	.4577
Florida	3	5	5	62.40	60.00	.5746	.5700
Indiana	2	3	3	60.00	60.00	.4000	.4167
Iowa	4	9	8	62.00	62.25	.4821	.5068
Louisiana	4	4	4	63.00	63.00	.5409	.5773
Maine	2	8	6	60.00	60.00	.5625	.5500
Michigan	6	13	13	60.00	60.00	.4038	.4288
Minnesota	4	14	14	60.00	60.00	.7357	.7357
Missouri	2	3	3	60.00	60.00	.4500	.4500
North Carolina	3	4	4	63.00	63.00	.4409	.4534
Ohio	2	4	3	60.00	60.00	.2875	.2833
Pennsylvania	2	3	4	60.00	60.00	.3833	.3925
Tennessee	2	5	4	60.00	60.00	.4800	.5000
Washington	4	12	11	60.00	60.00	.4938	.5091
Wisconsin	6	16	16	60.00	60.00	.4875	.5000
SAWYERS, CIRCULAR, Male.							
Alabama	2	2	2	60.00	60.00	$0.5000	$0.5500
Florida	2	2	2	59.50	57.00	.5000	.5000
Georgia	2	2	2	64.50	64.50	.3341	.2944
Louisiana	3	4	4	60.00	60.00	.5948	.5948
Michigan	2	2	2	60.00	60.00	.4250	.4500
Missouri	3	5	6	60.00	60.00	.3450	.2917
Oregon	2	4	3	60.00	60.00	.5375	.5067
Pennsylvania	2	2	2	60.00	60.00	.3500	.3500
South Carolina	2	2	2	61.00	61.00	.2679	.3155
Texas	2	5	5	60.00	60.00	.6600	.6600
Wisconsin	2	2	2	60.00	60.00	.5000	.5250

PAPER AND WOOD PULP.

BEATERS, Male.

Maine	2	146	172	54.60	48.00	$0.2108	$0.2394
Massachusetts	5	103	130	57.98	51.87	.1644	.1963
Michigan	2	25	26	60.00	60.00	.2020	.2051
New York	5	71	103	68.90	49.70	.1575	.2008
Ohio	2	12	12	71.50	71.50	.1648	.1705
Pennsylvania	3	55	52	72.00	72.00	.1545	.1603
Wisconsin	4	67	68	72.00	72.00	.1482	.1502
CALENDRERS, Male.							
Connecticut	2	119	132	48.20	48.18	$0.2172	$0.2366
Massachusetts	3	30	42	65.87	59.95	.1741	.1804
Michigan	3	35	35	60.00	60.00	.1948	.1940
Pennsylvania	3	42	57	64.26	72.00	.1607	.1487
Wisconsin	3	24	24	72.00	72.00	.1466	.1467

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

PAPER AND WOOD PULP—Concluded.

LABORERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Maine	3	136	127	53.03	58.47	$0.1852	$0.1725
Massachusetts	5	120	135	57.88	58.30	.1596	.1614
Michigan	3	107	110	60.00	60.00	.1514	.1550
New York	5	183	220	59.97	54.79	.1489	.1660
Ohio	2	78	73	59.65	59.66	.1513	.1545
Pennsylvania	2	354	387	61.79	61.49	.1506	.1524
Wisconsin	4	55	73	63.49	62.63	.1464	.1537

MACHINE TENDERS, Male.

Maine	3	69	77	53.71	49.25	$0.3022	$0.3660
Massachusetts	5	73	87	58.48	52.37	.2257	.2696
Michigan	2	14	14	60.00	60.00	.3196	.3143
New York	5	45	62	67.24	49.69	.3106	.4174
Ohio	2	10	10	71.60	71.60	.2386	.2435
Pennsylvania	3	33	32	72.00	72.00	.2737	.2900
Wisconsin	4	24	24	72.00	72.00	.2610	.2665

RAG SORTERS, Female.

Massachusetts	4	169	166	51.93	52.08	$0.1039	$0.1167
Michigan	2	20	27	60.00	60.00	.1134	.1468
Wisconsin	2	33	37	60.00	60.00	.0869	.0942

SHIPBUILDING.

BLACKSMITHS, Male.

California	2	32	27	53.81	53.78	$0.3766	$0.3904
Delaware	2	30	35	54.00	54.00	.2590	.2665
Maine	3	19	39	55.42	55.92	.2737	.2506
Maryland	3	19	25	58.11	58.32	.2686	.2605
Massachusetts	2	13	12	54.00	54.00	.3259	.3421
New Jersey	2	11	16	54.55	54.56	.3313	.3420
New York	5	19	22	53.58	53.64	.3699	.3857
Ohio	2	21	21	60.00	60.00	.2819	.2986
Pennsylvania	3	40	39	56.10	56.10	.2858	.2912

BOILER MAKERS, Male.

California	2	50	52	54.00	54.00	$0.4382	$0.4960
Delaware	2	38	38	54.00	54.00	.2670	.2721
Maryland	3	79	89	56.66	57.51	.2712	.2719
New Jersey	2	62	64	49.47	49.86	.3632	.3782
New York	2	24	25	53.08	53.12	.3352	.3361
Ohio	2	50	43	60.00	60.00	.3001	.3100
Pennsylvania	3	165	151	56.21	56.18	.2508	.2515

CALKERS, IRON, Male.

Delaware	2	37	56	54.00	54.00	$0.2280	$0.2246
Maryland	2	17	19	54.88	54.89	.2446	.2478
New York	2	28	41	53.89	53.93	.3042	.3202
Ohio	2	57	47	60.00	60.00	.2632	.2780
Pennsylvania	3	217	154	56.17	56.15	.2726	.2727

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

SHIPBUILDING—Continued.

CALKERS, WOOD, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Maine	3	75	54	57.53	56.96	$0.2739	$0.2735
Maryland	2	55	55	54.00	54.00	.3056	.3056
Massachusetts	3	22	14	49.64	48.86	.3801	.4187
New Jersey	2	133	121	49.53	48.26	.4199	.4180
New York	7	75	97	53.77	52.00	.3270	.3591

CARPENTERS, Male.

California	3	136	106	52.46	52.87	$0.4470	$0.4801
Delaware	3	143	150	54.00	54.00	.2947	.3089
Maine	4	191	218	56.87	57.26	.2396	.2559
Maryland	3	70	65	54.21	54.40	.3190	.3092
Massachusetts	3	94	85	52.72	52.45	.3288	.3443
New Jersey	3	244	330	50.37	48.72	.4038	.4109
New York	7	341	398	53.54	52.18	.3046	.3240
Ohio	2	129	147	60.00	60.00	.2965	.3055
Pennsylvania	3	243	197	56.09	55.10	.2942	.3129

DRILLERS, Male.

Delaware	2	25	37	54.00	54.00	$0.1684	$0.1669
Maine	3	35	28	55.23	55.29	.1852	.1905
Maryland	2	31	56	54.90	54.93	.1664	.1732
New York	2	23	43	53.87	53.93	.2260	.2412
Ohio	2	76	57	60.00	60.00	.1726	.1763
Pennsylvania	3	304	207	56.17	56.17	.2430	.2638

FITTERS, Male.

Delaware	2	73	83	54.00	54.00	$0.2758	$0.2666
Maryland	2	47	44	54.81	54.77	.2900	.2914
Massachusetts	2	28	27	54.00	54.00	.2952	.3264
New York	3	48	59	53.71	53.78	.3107	.3085
Ohio	2	66	82	60.00	60.00	.2728	.2879
Pennsylvania	3	151	125	55.97	55.94	.2386	.2428

JOINERS, Male.

California	3	177	94	53.69	53.49	$0.4352	$0.4685
Delaware	2	95	112	54.00	54.00	.2830	.2866
Maine	3	34	45	56.88	56.51	.2529	.2689
Maryland	3	59	83	54.58	54.71	.2931	.2832
Massachusetts	2	60	91	53.40	53.57	.3361	.3512
New Jersey	2	32	26	56.56	54.81	.2984	.3040
New York	4	57	86	53.96	53.66	.3333	.3374
Ohio	2	70	71	60.00	60.00	.2941	.3095
Pennsylvania	3	217	258	56.17	56.00	.2866	.2869

LABORERS, Male.

California	3	366	68	53.89	53.47	$0.2210	$0.2318
Delaware	3	319	365	54.00	54.00	.1482	.1556
Maine	4	81	68	55.19	55.57	.1849	.2026
Maryland	3	313	319	54.93	54.90	.1347	.1399
Massachusetts	2	51	72	54.00	54.00	.2052	.2241
New Jersey	2	195	204	55.51	54.51	.1734	.1736
New York	7	406	563	53.97	53.98	.1862	.1971
Ohio	2	788	1,250	60.00	60.00	.1599	.1758
Pennsylvania	3	404	553	57.83	58.33	.1357	.1443

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

SHIPBUILDING—Concluded.

MACHINISTS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
California	2	419	236	54.00	54.00	$0.3745	$0.3890
Delaware	2	147	202	54.00	54.00	.3063	.3091
Maryland	3	155	162	57.41	57.11	.2709	.2804
Massachusetts	2	105	99	54.00	54.00	.2886	.3059
New Jersey	2	94	123	52.10	51.98	.3269	.3301
New York	3	82	94	53.38	53.44	.3257	.3292
Ohio	2	215	192	60.00	60.00	.2778	.2946
Pennsylvania	3	618	624	56.17	56.17	.2571	.2620
PAINTERS, Male.							
Delaware	2	65	51	54.00	54.00	$0.2679	$0.2786
Maryland	3	165	140	54.08	54.19	.2340	.2308
New York	6	80	99	53.60	53.56	.2573	.2638
Ohio	2	19	39	60.00	60.00	.2342	.2164
Pennsylvania	3	157	150	56.14	56.12	.3158	.3193
RIGGERS, Male.							
California	4	48	64	49.50	52.13	$0.5514	$0.4120
Delaware	2	14	15	54.00	54.00	.2433	.2430
Maryland	2	18	22	54.83	54.86	.1861	.1841
Massachusetts	2	30	34	54.00	54.00	.2486	.2631
New York	3	51	112	53.84	53.93	.2049	.2211
Ohio	2	13	14	60.00	60.00	.2269	.2357
Pennsylvania	3	220	180	56.21	56.21	.2001	.2036
RIVETERS, Male.							
Delaware	2	86	95	54.00	54.00	$0.2605	$0.2393
Maryland	2	28	44	54.89	54.91	.3011	.3372
Massachusetts	2	18	25	54.00	54.00	.3630	.3933
New York	3	86	126	53.77	53.78	.3085	.3217
Pennsylvania	2	177	135	56.09	56.04	.3582	.3584

SILK GOODS.

QUILLERS, Female.

Connecticut	2	76	88	60.00	59.61	$0.0997	$0.1053
New Jersey	4	107	101	55.00	55.00	.0908	.1000
New York	3	30	35	58.07	58.60	.0860	.1025
Pennsylvania	5	123	120	58.44	58.33	.0814	.0896
SPINNERS, Male.							
New Jersey	2	30	27	55.00	55.00	$0.1248	$0.1347
Pennsylvania	3	138	128	58.68	57.03	.0856	.0908
WARPERS, Female.							
Connecticut	2	135	118	60.00	59.80	$0.1511	$0.1561
New Jersey	4	120	156	55 00	55 00	.1986	.1929
Pennsylvania	5	267	251	58.49	58.14	.1308	.1474

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Continued.

SILK GOODS—Concluded.

WEAVERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Connecticut	2	262	271	60.00	59.65	$0.2053	$0.2115
New Jersey	4	228	201	55.00	55.00	.2154	.2104
New York	3	122	113	55.72	56.16	.1997	.2048
Pennsylvania	2	88	101	59.42	58.71	.1673	.1454

WEAVERS, Female.

Connecticut	2	264	278	60.00	59.54	$0.1636	$0.1674
New Jersey	2	206	231	55.00	55.00	.2003	.2125
New York	2	242	212	59.55	59.79	.1657	.1681
Pennsylvania	5	1,044	947	58.37	57.92	.1249	.1402

WINDERS, Female.

Connecticut	2	242	227	60.00	59.81	$0.1060	$0.1099
New Jersey	5	189	163	55.00	55.00	.1240	.1343
New York	3	46	41	57.15	57.27	.1389	.1453
Pennsylvania	5	380	337	59.08	58.62	.0910	.1018

WOOLEN AND WORSTED GOODS.

BURLERS, Female.

Connecticut	2	22	31	60.00	58.19	$0.1611	$0.1489
Maine	3	109	96	60.00	60.00	.1077	.1235
Massachusetts	6	147	215	58.00	58.00	.1143	.1220
New Hampshire	3	81	113	60.00	58.00	.1074	.1171
New Jersey	2	55	149	55.55	55.30	.1032	.1030
New York	2	112	119	57.64	57.53	.0920	.1012
Pennsylvania	6	109	121	59.12	59.21	.1078	.1029
Rhode Island	5	135	191	57.04	58.00	.1154	.1233

CARDERS, Male.

Connecticut	2	17	15	60.00	59.33	$0.1264	$0.1344
Maine	3	20	21	60.00	60.00	.1125	.1152
Massachusetts	6	65	66	58.00	58.00	.1220	.1216
New Hampshire	2	24	14	60.00	58.57	.1146	.1321
New York	2	17	23	58.59	58.74	.1194	.1229
Pennsylvania	3	15	14	59.60	59.57	.1234	.1338
Rhode Island	5	36	43	58.00	58.00	.1123	.1336

DYERS, Male.

Connecticut	2	11	15	60.00	58.53	$0.1442	$0.1505
Maine	3	79	95	60.00	60.00	.1422	.1497
Massachusetts	6	177	220	58.00	58.00	.1385	.1480
New Hampshire	3	173	108	60.00	58.00	.1440	.1645
New York	2	41	37	58.39	58.14	.1365	.1425
Pennsylvania	4	58	70	58.97	58.80	.1586	.1592
Rhode Island	5	118	132	60.89	60.70	.1312	.1396

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TABLE V.—AVERAGE WAGES AND HOURS OF LABOR, 1906 AND 1907, IN SELECTED OCCUPATIONS, BY STATES—Concluded.

WOOLEN AND WORSTED GOODS—Concluded.

LOOM FIXERS, Male.

State.	Number of establishments.	Number of employees.		Average hours per week.		Average wages per hour.	
		1906.	1907.	1906.	1907.	1906.	1907.
Connecticut	2	14	17	60.00	58.47	$0.2057	$0.2147
Maine	3	21	22	60.00	60.00	.2453	.2413
Massachusetts	6	79	79	58.00	58.00	.2517	.2701
New Hampshire	3	43	42	60.00	58.00	.2156	.2383
New Jersey	2	24	33	55.42	55.30	.2794	.2802
New York	2	22	21	58.23	58.29	.2432	.2579
Pennsylvania	6	51	50	58.53	58.56	.3064	.3107
Rhode Island	5	79	83	58.00	58.00	.2510	.2660

SPINNERS, FRAME, Female.

New York	2	153	140	57.41	57.36	$0.0970	$0.1066
Rhode Island	2	115	141	58.00	58.00	.1128	.1186

SPINNERS, MULE, Male.

Connecticut	2	23	25	60.00	59.36	$0.1541	$0.1641
Maine	2	25	25	60.00	60.00	.2195	.2120
Massachusetts	6	100	91	59.41	59.85	.2127	.2201
New Hampshire	3	35	56	60.00	58.04	.1842	.1905
New Jersey	2	53	55	55.47	55.64	.2329	.2352
Pennsylvania	2	20	24	58.35	58.75	.1523	.1470
Rhode Island	5	70	68	58.00	58.00	.2003	.2159

WEAVERS, Male.

Connecticut	2	151	154	60.00	58.43	$0.2266	$0.2299
Maine	3	163	172	60.00	60.00	.1629	.1631
Massachusetts	6	321	389	58.00	58.00	.1955	.2072
New Hampshire	2	23	53	60.00	58.00	.1807	.1782
New Jersey	2	37	58	56.62	56.55	.1967	.2074
New York	2	106	132	59.29	59.39	.1810	.2041
Pennsylvania	5	229	281	59.25	59.22	.2265	.2266
Rhode Island	5	414	444	58.00	58.00	.2085	.2250

WEAVERS, Female.

Connecticut	2	35	35	60.00	59.83	$0.1796	$0.1670
Maine	3	137	154	60.00	60.00	.1453	.1503
Massachusetts	6	756	630	58.00	58.00	.1693	.1929
New Hampshire	2	97	70	60.00	58.00	.1784	.1815
New Jersey	2	108	107	55.37	55.33	.1654	.1686
New York	2	219	194	57.95	57.57	.1365	.1455
Pennsylvania	5	142	157	59.05	58.89	.2157	.2135
Rhode Island	5	707	652	58.00	58.00	.1749	.1909

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RETAIL PRICES OF FOOD, 1890 TO 1907.

This article presents the retail prices of 30 staple food commodities as sold in 68 localities in the United States by 1,014 dealers. These retail prices taken in connection with summary figures from the Eighteenth Annual Report and Bulletins 59, 65, and 71 of this Bureau, reproduced herein, afford an opportunity for the comparison of retail prices of food in the years 1890 to 1907, inclusive.

Retail prices of food in 1907 were higher than in any other year of the eighteen-year period above named, being 4.2 per cent higher than in 1906.

The average prices of 29 of the 30 articles included in this compilation of prices were higher in 1907 than in 1906. The articles which showed the greatest advance in prices are flour 8.9 per cent, butter 8.0 per cent, evaporated apples 7.8 per cent, milk 7.3 per cent, corn meal 6.8 per cent, cheese 6.7 per cent, and potatoes 5.4 per cent. The only article which showed a decrease is tea, the decrease being 0.2 per cent.

The table which follows shows the per cent of increase or decrease in price for each of the 30 articles when the average price in 1907 is compared with the average price in 1906:

PER CENT OF INCREASE OR DECREASE IN THE AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 1907 AS COMPARED WITH 1906.

Articles for which the average price in 1907 was higher than the average price in 1906.	Per cent of increase in price.	Articles for which the average price in 1907 was lower than the average price in 1906.	Per cent of decrease in price.
Coffee	0.3	Tea	0.2
Sugar	1.4		
Veal	1.5		
Chickens (year or more old), dressed	1.8		
Vinegar	1.9		
Bread, wheat	2.2		
Molasses	2.3		
Eggs	2.6		
Rice	2.6		
Pork, salt, ham	2.8		
Beef, fresh, roasts	2.9		
Beef, salt	3.0		
Beans, dry	3.1		
Pork, salt, dry or pickled	3.1		
Beef, fresh, steaks	3.5		
Pork, fresh	3.5		
Fish, fresh	3.8		
Prunes	3.9		
Fish, salt	4.1		
Pork, salt, bacon	4.6		
Lard	4.8		
Mutton	4.8		
Potatoes, Irish	5.4		
Cheese	6.7		
Corn meal	6.8		
Milk, fresh, unskimmed	7.3		
Apples, evaporated	7.8		
Butter	8.0		
Flour, wheat	8.9		

Retail prices in each month of 1907 were higher than in the corresponding month of 1906; in January they were 3.9 per cent higher, in February 4.2 per cent higher, in March 4.0 per cent higher, in April 3.9 per cent higher, in May 4.1 per cent higher, in June 4.3 per cent higher, in July 4.5 per cent higher, in August 4.8 per cent higher, in September 5.1 per cent higher, in October 5.4 per cent higher, in

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November 4.0 per cent higher, and in December 3.1 per cent higher. Thus it is seen that October, 1907, showed a greater increase over the corresponding month of 1906 than any other month of 1907, and December showed the least increase. These figures are computed from the weighted averages shown in the table on page 187.

In comparing the months of 1907 with the same months in 1906, it was found that in January 27 of the 30 articles were higher in price and 3 lower; in February 27 articles were higher, 1 the same, and 2 lower; in March 29 were higher and 1 the same; in April, May, June, July, August, and September each 29 articles were higher and 1 lower; in October 28 were higher and 2 lower; in November 25 were higher, 1 the same, and 4 lower, and in December 22 were higher, 1 the same, and 7 lower.

While December showed the least increase in prices, in a comparison of 1907 month by month with the preceding year, prices in December, 1907, were higher than in any other month of the same or the preceding year, as may be seen on page 187.

The table which follows shows the per cent of increase or decrease in price for each of the 30 articles of food when the average price in October, November, and December, 1907, is compared with the average price in the corresponding months of 1906. These three months only are taken, as the month of October shows the greatest variation in the year and December brings the information down to the latest date.

PER CENT OF INCREASE OR DECREASE IN THE AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN OCTOBER, NOVEMBER, AND DECEMBER, 1907, AS COMPARED WITH THE CORRESPONDING MONTHS IN 1906.

Articles for which the average price in certain months of 1907 was higher than in the corresponding months of 1906.	Per cent of increase in price.			Articles for which the average price in certain months of 1907 was lower than in the corresponding months of 1906.	Per cent of decrease in price.		
	Oct., 1907, over Oct., 1906.	Nov., 1907, over Nov., 1906.	Dec., 1907, over Dec., 1906.		Oct., 1907, below Oct., 1906.	Nov., 1907, below Nov., 1906.	Dec., 1907, below Dec., 1906.
Coffee	0.1	(a)	(a)	Coffee	(b)	(a)	(a)
Pork, salt, ham	.4	(c)	(c)	Pork, salt, dry or pickled	0.1	1.2	2.3
Veal	1.3	0.7	0.9	Tea	.3	.3	.3
Lard	1.4	.1	(c)	Pork, salt, ham	(b)	.9	2.0
Sugar	1.9	1.9	1.9	Eggs	(b)	.5	2.0
Chickens (year or more old), dressed	2.0	.2	(c)	Lard	(b)	(b)	1.0
Molasses	2.4	2.5	2.5	Chickens (year or more old), dressed	(b)	(b)	.7
Rice	2.4	2.3	2.2	Pork, fresh	(b)	(b)	1.8
Vinegar	2.7	2.5	2.5				
Bread, wheat	3.1	3.3	3.3				
Beef, salt	3.2	2.7	2.4				
Pork, fresh	3.2	.8	(c)				
Eggs	3.6	(c)	(c)				
Fish, fresh	3.6	3.4	2.9				
Pork, salt, bacon	3.6	1.7	.3				
Beef, fresh, steaks	3.8	3.5	2.9				
Beef, fresh, roasts	4.0	2.2	1.8				
Fish, salt	4.2	3.4	3.8				
Mutton	5.0	4.8	4.1				
Prunes	5.6	5.5	5.4				
Beans, dry	6.1	8.0	8.5				
Butter	8.2	4.4	.9				
Cheese	9.3	9.1	8.3				
Milk, fresh, unskimmed	9.7	9.8	9.6				
Corn meal	11.1	11.9	11.9				
Potatoes, Irish	11.4	10.0	10.1				
Apples, evaporated	13.6	14.6	15.3				
Flour, wheat	16.7	17.0	17.5				

a No change. b Increase. c Decrease.

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The articles which showed the most marked advance in prices in December, 1907, over December, 1906, are flour 17.5 per cent, evaporated apples 15.3 per cent, corn meal 11.9 per cent, potatoes 10.1 per cent, and milk, fresh, unskimmed, 9.6 per cent. No article shows any marked decline in price in December, 1907, from the price in December, 1906.

The average prices of 20 of the 30 articles were higher in 1907 than in any other year of the eighteen-year period, 1890 to 1907. The price of every article, except coffee, was higher in 1907 than in 1896, the year of lowest prices during the period, and in the case of 16 of the 30 articles it was more than 25 per cent above the level of 1896. The increases in the price of some of the more important articles over the 1896 prices were as follows: Bacon, 62.7 per cent; potatoes, 56.6 per cent; eggs, 48.4 per cent; salt pork, 47.9 per cent; fresh pork, 46.3 per cent, and lard, 45.1 per cent.

The average price in 1907 for each of the 30 articles separately and as a whole is compared with the average price during each of the years from 1890 to 1906 in the following table, which shows the per cent of increase or decrease:

PER CENT OF INCREASE (+) OR DECREASE (−) IN RETAIL PRICES OF PRINCIPAL ARTICLES OF FOOD IN 1907 AS COMPARED WITH SEVENTEEN PRECEDING YEARS.

Article.	Per cent of increase or decrease, 1907 compared with—							
	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Apples, evaporated	+14.3	+13.0	+25.4	+16.4	+17.8	+27.9	+40.6	+41.9
Beans, dry	+15.0	+11.9	+16.0	+13.1	+15.6	+18.2	+28.2	+29.8
Beef, fresh, roasts	+19.7	+19.1	+19.6	+20.3	+21.2	+20.8	+20.2	+18.7
Beef, fresh, steaks	+22.1	+21.3	+21.5	+21.1	+22.8	+21.7	+21.2	+20.4
Beef, salt	+17.0	+16.1	+14.7	+13.8	+15.4	+14.6	+14.3	+13.1
Bread, wheat	+ 4.2	+ 4.2	+ 4.2	+ 4.4	+ 4.6	+ 4.8	+ 4.6	+ 4.5
Butter	+28.6	+19.9	+19.5	+16.1	+25.5	+31.5	+37.6	+37.1
Cheese	+24.7	+22.8	+21.4	+21.0	+21.3	+24.2	+25.8	+24.4
Chickens (year or more old), dressed	+29.7	+26.3	+26.6	+26.1	+33.3	+33.5	+35.3	+39.8
Coffee	− 9.9	− 9.7	− 8.5	− 9.4	− 8.0	− 6.6	− 4.6	+ .4
Corn meal	+31.6	+20.0	+25.1	+27.6	+28.8	+30.6	+38.5	+40.4
Eggs	+36.9	+28.8	+28.9	+27.4	+43.0	+38.7	+48.4	+50.7
Fish, fresh	+21.5	+21.1	+20.5	+20.5	+20.1	+20.8	+20.4	+20.8
Fish, salt	+20.8	+19.6	+19.0	+17.6	+19.8	+23.0	+24.7	+27.7
Flour, wheat	+ 7.3	+ 4.6	+12.0	+22.5	+32.7	+32.2	+27.0	+12.8
Lard	+36.7	+34.5	+29.5	+13.8	+25.5	+34.1	+45.1	+49.4
Milk, fresh, unskimmed	+16.2	+16.2	+16.1	+16.3	+16.6	+16.8	+16.9	+17.2
Molasses	+ 2.9	+ 5.9	+ 6.4	+ 7.1	+ 7.4	+ 8.8	+ 9.1	+10.2
Mutton	+29.2	+29.3	+28.8	+30.2	+33.0	+31.8	+31.8	+30.6
Pork, fresh	+46.9	+44.4	+41.8	+33.2	+40.0	+42.9	+46.3	+46.0
Pork, salt, bacon	+64.2	+62.8	+58.7	+44.3	+51.8	+58.2	+62.7	+61.5
Pork, salt, dry or pickled	+48.2	+42.8	+40.5	+29.9	+36.6	+42.3	+47.9	+45.1
Pork, salt, ham	+32.4	+31.6	+28.3	+19.6	+28.3	+32.3	+33.9	+33.1
Potatoes, Irish	+10.3	+ 3.4	+26.0	+ 7.4	+17.5	+31.4	+56.6	+29.7
Prunes	−24.3	−24.1	−22.1	−23.5	−12.4	− 6.2	+ 1.8	+ 4.9
Rice	+ 7.1	+ 5.9	+ 7.1	+10.3	+ 9.6	+ 9.8	+12.2	+10.8
Sugar	−16.0	− 3.0	+ 3.5	− 1.9	+ 6.2	+ 8.5	+ 3.1	+ 4.1
Tea	+ 5.3	+ 4.9	+ 5.1	+ 5.2	+ 6.7	+ 6.9	+ 6.6	+ 6.9
Veal	+26.5	+25.5	+25.0	+25.0	+26.6	+26.9	+25.6	+25.1
Vinegar	+ 1.6	− .9	+ 1.8	+ 5.0	+ 4.7	+ 5.7	+ 7.5	+ 7.3
All food, simple averages	+18.2	+16.7	+18.6	+15.9	+20.3	+22.9	+26.0	+25.3
All food, weighted according to family consumption	+17.8	+16.2	+18.4	+15.5	+21.0	+23.3	+26.3	+25.2

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PER CENT OF INCREASE (+) OR DECREASE (−) IN RETAIL PRICES OF PRINCIPAL ARTICLES OF FOOD IN 1907 AS COMPARED WITH SEVENTEEN PRECEDING YEARS—Concluded.

Article.	Per cent of increase or decrease, 1907 compared with—								
	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.
Apples, evaporated	+30.6	+25.2	+30.9	+28.7	+19.3	+23.6	+25.6	+17.5	+ 7.8
Beans, dry	+23.9	+19.2	+ 8.0	+ 4.3	+ 1.7	+ .6	+ 1.7	+ 2.1	+ 3.1
Beef, fresh, roasts	+17.1	+14.9	+11.8	+ 7.6	+ .4	+ 5.3	+ 5.6	+ 6.1	+ 2.9
Beef, fresh, steaks	+18.2	+16.1	+13.3	+ 8.6	+ 1.8	+ 6.8	+ 6.3	+ 6.8	+ 3.5
Beef, salt	+11.8	+10.6	+10.0	+ 7.5	− 1.6	+ 4.9	+ 5.4	+ 5.7	+ 3.0
Bread, wheat	+ 4.7	+ 4.9	+ 4.8	+ 5.1	+ 5.1	+ 4.3	+ .6	(a)	+ 2.2
Butter	+34.2	+30.6	+25.8	+23.6	+14.4	+15.2	+17.1	+13.2	+ 8.0
Cheese	+26.4	+20.3	+18.6	+19.3	+14.8	+12.6	+14.7	+11.1	+ 6.7
Chickens (year or more old), dressed	+35.7	+29.1	+30.4	+27.6	+16.1	+10.9	+ 8.9	+ 6.3	+ 1.8
Coffee	+ 4.3	+ 5.0	+ 4.3	+ 4.7	+ 6.0	+ 6.4	+ 3.5	+ 1.5	+ .3
Corn meal	+38.5	+38.4	+35.1	+22.9	+10.8	+ 9.0	+ 8.3	+ 7.7	+ 6.8
Eggs	+43.1	+36.2	+37.8	+30.3	+15.6	+ 9.9	+ 5.2	+ 4.6	+ 2.6
Fish, fresh	+20.0	+20.4	+20.1	+18.9	+14.9	+12.4	+11.8	+ 9.7	+ 3.8
Fish, salt	+23.1	+21.4	+22.7	+20.5	+18.3	+12.2	+ 8.9	+ 6.9	+ 4.1
Flour, wheat	+ 9.6	+24.4	+24.8	+24.7	+24.0	+16.3	− 1.8	− 1.8	+ 8.9
Lard	+42.9	+38.2	+28.5	+13.6	− .1	+ 5.9	+14.4	+15.1	+ 4.8
Milk, fresh, unskimmed	+17.5	+18.1	+16.9	+15.5	+13.1	+10.4	+ 9.9	+ 9.2	+ 7.3
Molasses	+10.0	+ 9.7	+ 5.4	+ 6.3	+ 5.5	+ 3.8	+ 3.6	+ 3.2	+ 2.3
Mutton	+29.6	+26.8	+23.2	+19.4	+13.4	+15.5	+14.0	+10.4	+ 4.8
Pork, fresh	+44.5	+40.1	+32.3	+20.9	+11.1	+12.2	+14.9	+12.6	+ 3.5
Pork, salt, bacon	+57.0	+52.9	+43.4	+30.0	+16.0	+12.5	+14.1	+13.3	+ 4.6
Pork, salt, dry or pickled	+42.5	+38.7	+31.1	+20.2	+ 6.6	+ 9.5	+12.2	+12.1	+ 3.1
Pork, salt, ham	+37.4	+31.8	+24.1	+18.6	+ 9.5	+ 7.7	+10.4	+10.3	+ 2.8
Potatoes, Irish	+14.4	+25.5	+29.0	+ 3.3	+ 3.1	+ 5.1	− .6	+ 9.4	+ 5.4
Prunes	+ 2.4	+ 3.9	+ 6.5	+ 7.0	+ 6.0	+10.2	+11.1	+ 8.6	+ 3.9
Rice	+ 6.7	+ 6.0	+ 6.0	+ 4.8	+ 4.8	+ 4.4	+ 6.8	+ 5.8	+ 2.6
Sugar	− 1.7	− 2.1	− 5.1	− 3.3	+ 3.8	+ 3.6	− 2.3	− 4.1	+ 1.4
Tea	+ 4.6	+ .9	− .2	− 1.3	− 1.8	− .7	− .5	− .4	− .2
Veal	+23.5	+20.5	+19.2	+14.9	+ 8.5	+ 8.8	+ 8.2	+ 6.2	+ 1.5
Vinegar	+ 6.7	+ 6.3	+ 6.1	+ 5.7	+ 5.0	+ 5.4	+ 5.7	+ 4.2	+ 1.9
All food, simple averages	+22.5	+21.2	+18.9	+14.4	+ 8.8	+ 8.8	+ 8.2	+ 7.3	+ 3.9
All food, weighted according to family consumption	+22.2	+21.2	+19.3	+14.6	+ 8.7	+ 9.3	+ 8.0	+ 7.3	+ 4.2

a No change.

The line of this table relating to eggs, for example, shows that the 1907 price of eggs was 36.9 per cent higher than the price in 1890, 28.8 per cent higher than the price in 1891, etc.

The greatest advance shown by this table was in bacon, the price in 1907 being 64.2 per cent higher than in 1890. The greatest decrease was in prunes, the price in 1907 being 24.3 per cent lower than in 1890.

When the 30 articles are taken as a whole and weighted according to family consumption, the price in 1907 was, according to the above table, 17.8 per cent above the price in 1890, 16.2 per cent above that in 1891, 18.4 per cent above 1892, 15.5 per cent above 1893, 21.0 per cent above 1894, 23.3 per cent above 1895, 26.3 per cent above 1896, 25.2 per cent above 1897, 22.2 per cent above 1898, 21.2 per cent above 1899, 19.3 per cent above 1900, 14.6 per cent above 1901, 8.7 per cent above 1902, 9.3 per cent above 1903, 8.0 per cent above 1904, 7.3 per cent above 1905, and 4.2 per cent above 1906.

In order that the course of prices of the various articles through a series of years may be studied, relative prices have been computed for each of the 30 articles included in this investigation. These rela-

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tive prices have also been combined so that the course of prices of food as a whole may be seen.

A relative price, or index number, as it is technically called, of any article is the per cent which the price of that article at any certain date is of the price of the same article at a date or period which has been selected as the base or standard. The value of the relative price is that it enables the reader to follow more readily the course of prices of a single article and especially of groups of articles. The base selected for the compilation of retail prices is the average price for the ten-year period, 1890 to 1899. This base period is the same as was used in the presentation of wholesale prices in Bulletins 39, 45, 51, 57, 63, 69, and 75 of this Bureau, and as used in the preceding article of this Bulletin on wages and hours of labor. The reason for selecting this base period is set forth on page 212.

The table which follows shows for each of the five geographical divisions and for the United States as a whole the relative prices of food for each year from 1890 to 1907. In the first column under each division is shown the simple average of the relative prices of the 30 articles. In the second column under each division is shown the relative prices weighted according to the average consumption of the various articles of food in workingmen's families. The relative prices obtained by the two methods are presented so that the reader can make such use or comparison as he may desire.

RELATIVE RETAIL PRICES OF FOOD, SIMPLE AND WEIGHTED AVERAGES, BY GEOGRAPHICAL DIVISIONS, 1890 TO 1907.

[Average price for 1890–1899=100.0.]

Year.	North Atlantic division.		South Atlantic division.		North Central division.		South Central division.		Western division.		United States.	
	Simple.	Weighted.	Simple.	Weighted.	Simple.	Weighted.	Simple.	Weighted.	Simple.	Weighted.	Simple.	Weighted.
1890	101.9	102.3	100.7	101.2	102.3	102.3	101.1	102.1	105.4	107.7	102.1	102.4
1891	102.9	103.2	101.5	102.1	104.1	104.5	102.9	103.6	106.2	108.7	103.4	103.8
1892	102.0	102.1	100.6	101.1	101.7	101.8	100.6	100.7	104.4	105.2	101.8	101.9
1893	104.3	104.4	102.1	103.2	105.0	105.4	102.9	103.5	102.7	102.9	104.1	104.4
1894	99.9	99.2	100.3	100.0	100.9	100.6	99.9	100.0	99.4	99.3	100.3	99.7
1895	98.2	97.7	99.5	98.7	98.3	98.0	98.2	98.1	97.3	96.7	98.2	97.8
1896	96.2	97.0	97.5	96.8	94.9	94.6	96.2	96.1	93.9	93.2	95.8	95.5
1897	96.9	96.9	97.8	97.1	95.3	95.6	97.2	97.3	94.2	92.7	96.3	96.3
1898	98.3	98.8	99.4	99.3	98.1	98.4	99.9	98.8	96.7	95.2	98.5	98.7
1899	99.3	99.5	100.6	100.5	99.4	98.9	101.0	99.9	99.8	98.5	99.6	99.5
1900	101.3	101.2	102.2	102.4	101.7	100.8	103.3	101.1	100.1	98.1	101.5	101.1
1901	104.4	104.7	106.6	106.9	106.7	106.1	108.1	106.9	102.0	99.9	105.5	105.2
1902	110.0	110.5	110.8	111.8	112.1	111.7	114.1	113.5	106.9	104.4	110.9	110.9
1903	110.4	110.1	110.1	111.2	112.0	111.0	114.0	113.5	108.1	103.7	110.9	110.3
1904	111.2	111.7	110.2	111.9	112.6	112.1	115.0	115.0	109.4	104.9	111.6	111.7
1905	111.8	112.1	111.2	113.0	114.0	113.1	115.9	115.9	110.0	105.7	112.5	112.4
1906	115.2	114.8	115.9	116.2	117.8	116.5	118.9	119.0	113.6	110.1	116.2	115.7
1907	119.4	119.4	120.3	122.3	121.8	121.2	124.6	124.6	119.1	116.2	120.7	120.6

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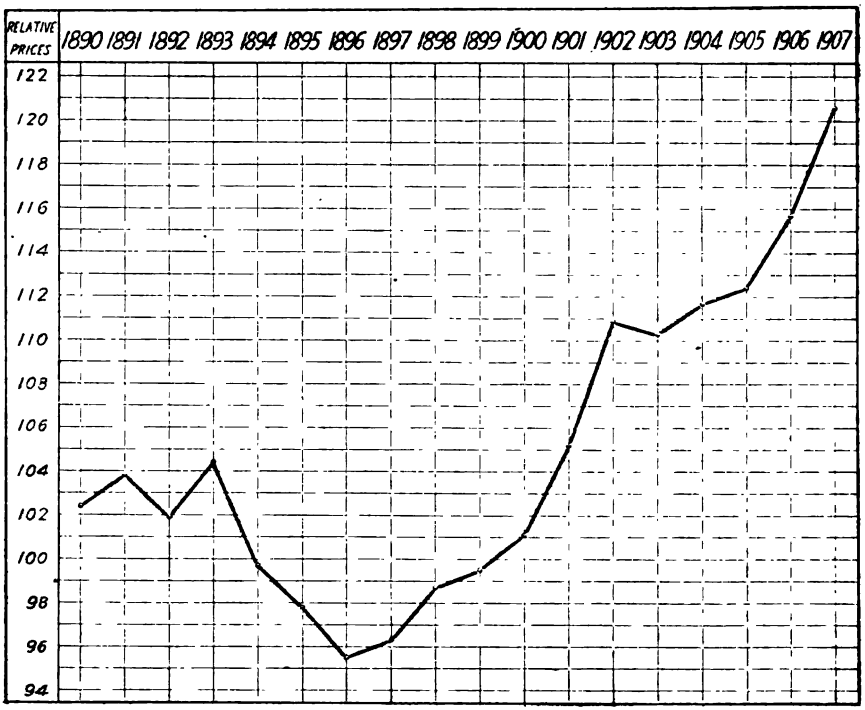
The relative number 102.4 under United States, weighted, opposite 1890 indicates that the price in 1890 was 102.4 per cent of the average price for the ten years from 1890 to 1899, inclusive. The next year the relative price advanced to 103.8. After a decline in 1892 the relative price advanced in 1893 to 104.4. In the three years following there was a steady decline until in 1896 the relative price was 95.5, or 4.5 below the average price from 1890 to 1899. Except for a slight decline in 1903, there has been an advance each year from 1896 to 1907, the relative price in 1907 being 120.6, indicating that the price in 1907 was 120.6 of the average price from 1890 to 1899.

The relative prices shown in this column for the weighted average are given in the form of a diagram in the accompanying graphic table:

RELATIVE RETAIL PRICES OF FOOD IN THE UNITED STATES, WEIGHTED ACCORDING TO AVERAGE CONSUMPTION IN WORKINGMEN'S FAMILIES, BY YEARS, 1890 TO 1907.

[Average price for 1890 to 1899=100.0.]



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The columns giving the relative prices, when the various articles of food are weighted according to their consumption in workingmen's families, indicate that the lowest relative price was reached in the North Atlantic and Western divisions in 1897 and in each of the other geographical divisions and in the United States as a whole in 1896. The highest relative price was reached in each of the five geographical divisions and in the United States as a whole in 1907.

It is interesting to compare the results under the two methods of computing relative prices of food. In the North Atlantic division there is a difference of 0.4 in 1890, 0.3 in 1891, 0.1 in 1892, 0.1 in 1893, 0.7 in 1894, 0.5 in 1895, 0.8 in 1896, nothing in 1897, 0.5 in 1898, 0.2 in 1899, 0.1 in 1900, 0.3 in 1901, 0.5 in 1902, 0.3 in 1903, 0.5 in 1904, 0.3 in 1905, 0.4 in 1906, and nothing in 1907. The greatest difference in results obtained under the two methods is found in the Western division.

In the United States, considered as a whole, there is a difference under the two methods of 0.6 in two years, 0.5 in one year, 0.4 in three years, 0.3 in four years, 0.2 in one year, 0.1 in five years, and nothing in two years.

The table which follows shows the relative prices of food for each month of the years 1905, 1906, and 1907. The table presents the simple average of the relative prices of the 30 articles and the average in which the various articles of food are given a weight according to their consumption in workingmen's families.

RELATIVE RETAIL PRICES OF FOOD, SIMPLE AND WEIGHTED AVERAGES, BY MONTHS, 1905 TO 1907.

[Average price for 1890–1899=100.0.]

Month.	Simple.			Weighted.		
	1905.	1906.	1907.	1905.	1906.	1907.
January	113.8	115.9	120.2	115.6	117.0	121.6
February	113.8	115.6	120.1	115.7	116.2	121.1
March	113.0	115.2	119.4	113.8	115.0	119.6
April	112.1	115.0	118.9	112.0	113.9	118.3
May	111.5	114.7	118.9	110.6	113.0	117.6
June	111.2	115.0	119.3	109.8	112.9	117.8
July	111.2	115.3	119.8	109.7	113.3	118.4
August	111.3	115.6	120.4	110.1	113.8	119.3
September	111.7	116.3	121.3	110.7	115.2	121.1
October	112.5	117.4	122.9	112.1	117.1	123.4
November	113.5	118.6	123.3	113.8	119.4	124.2
December	114.4	119.5	123.5	115.3	121.2	125.0
Year	112.5	116.2	120.7	112.4	115.7	120.6

The table shows that in every month of 1907 the price of food was higher than in the corresponding month of 1906, and that in December, 1907, the price was higher than in any other month shown in the table, being 25.0 per cent above the average price for the ten-year period, 1890 to 1899.

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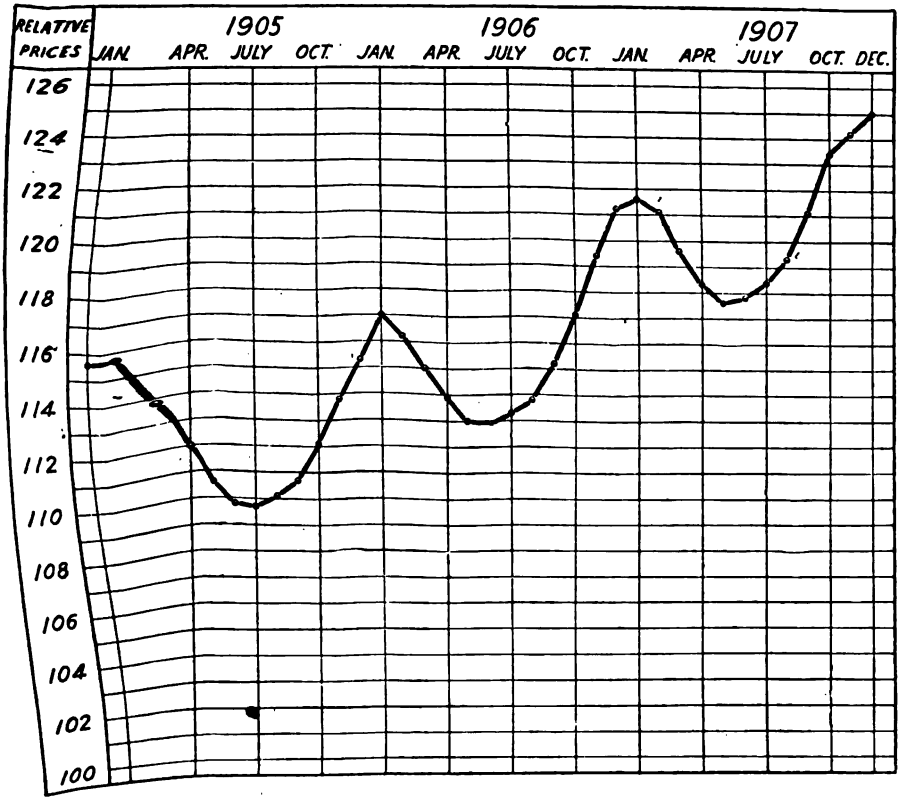
The relative price computed by giving to each article a weight according to its average consumption in workingmen's families was higher than the simple average during the winter months and lower during the summer months. This difference is due to the seasonal fluctuations of articles of large consumption, such as butter, eggs, etc.

The course of relative prices of food, weighted averages, during the months of 1905, 1906, and 1907, indicated in the preceding table, is also shown in the accompanying graphic table.

RELATIVE RETAIL PRICES OF FOOD IN THE UNITED STATES, WEIGHTED ACCORDING TO AVERAGE CONSUMPTION IN WORKINGMEN'S FAMILIES, BY MONTHS, 1905 TO 1907.

[Average price for 1890 to 1899=100.0.]



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The relative retail prices in the United States, considered as a whole, of the 30 articles of food for the eighteen years, 1890 to 1907, are presented in the table which follows:

RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, 1890 TO 1907.

[Average price for 1890–1899=100.0.]

Year.	Apples, evaporated.	Beans, dry.	Beef, fresh, roasts.	Beef, fresh, steaks.	Beef, salt.	Bread, wheat.	Butter.	Cheese.	Chickens (year or more old), dressed.	Coffee.
1890	109.0	103.3	99.5	98.8	97.5	100.3	99.2	98.8	101.3	105.4
1891	110.3	106.2	100.0	99.4	98.3	100.3	106.4	100.3	104.0	105.2
1892	99.3	102.4	99.6	99.3	99.5	100.3	106.8	101.5	103.8	103.8
1893	107.0	105.0	99.0	99.6	100.3	100.1	109.9	101.8	104.2	104.8
1894	105.8	102.8	98.3	98.2	98.9	99.9	101.7	101.6	98.6	103.3
1895	97.4	100.5	98.6	99.1	99.6	99.7	97.0	99.2	98.4	101.7
1896	88.6	92.7	99.1	99.5	99.8	99.9	92.7	97.9	97.1	99.6
1897	87.8	91.5	100.3	100.2	100.9	100.0	93.1	99.0	94.0	94.6
1898	95.4	95.9	101.7	102.0	102.1	99.8	95.1	97.5	96.8	91.1
1899	99.5	99.7	103.7	103.9	103.2	99.6	97.7	102.4	101.8	90.5
1900	95.2	110.0	106.5	106.4	103.7	99.7	101.4	103.9	100.8	91.1
1901	96.8	113.9	110.7	111.0	106.1	99.4	103.2	103.3	103.0	90.7
1902	104.4	116.8	118.6	118.5	116.0	99.4	111.5	107.3	113.2	89.6
1903	100.8	118.1	113.1	112.9	108.8	100.2	110.8	109.4	113.5	89.3
1904	99.2	116.8	112.8	113.4	108.3	103.9	109.0	107.4	120.7	91.8
1905	106.0	116.3	112.2	112.9	107.9	104.5	112.7	110.9	123.6	93.6
1906	115.6	115.2	115.7	116.5	110.8	102.3	118.2	115.5	129.1	94.7
1907	124.6	118.8	119.1	120.6	114.1	104.5	127.6	123.2	131.4	95.0

Year.	Corn meal.	Eggs.	Fish, fresh.	Fish, salt.	Flour, wheat.	Lard.	Milk, fresh, unskimmed.	Molasses.	Mutton.	Pork, fresh.
1890	100.0	100.6	99.3	100.7	109.7	98.2	100.5	104.7	100.7	97.0
1891	109.7	106.9	99.6	101.7	112.5	99.8	100.5	101.7	100.6	98.7
1892	105.2	106.8	100.1	102.2	105.1	103.6	100.6	101.2	101.0	100.5
1893	103.1	108.1	100.1	103.4	96.1	117.9	100.4	100.6	99.9	107.0
1894	102.2	96.3	100.4	101.5	88.7	106.9	100.2	100.3	97.8	101.8
1895	100.8	99.3	99.8	98.9	89.0	100.1	100.0	99.0	98.7	99.7
1896	95.0	92.8	100.2	97.5	92.7	92.5	99.9	98.7	98.7	97.4
1897	93.7	91.4	99.8	95.2	104.3	89.8	99.7	97.7	99.6	97.6
1898	95.0	96.2	100.5	98.8	107.4	93.9	99.4	97.9	100.4	98.6
1899	95.1	101.1	100.2	100.2	94.6	97.1	98.9	98.2	102.6	101.7
1900	97.4	99.9	100.4	99.1	94.3	104.4	99.9	102.2	105.6	107.7
1901	107.1	105.7	101.4	100.9	94.4	118.1	101.1	101.3	109.0	117.9
1902	118.8	119.1	105.0	102.8	94.9	134.3	103.3	102.1	114.7	128.3
1903	120.7	125.3	107.3	108.4	101.2	126.7	105.8	103.8	112.6	127.0
1904	121.5	130.9	107.9	111.7	119.9	117.3	106.3	104.0	114.1	124.0
1905	122.2	131.6	109.9	113.8	119.9	116.6	107.0	104.4	117.8	126.6
1906	123.2	134.2	116.2	116.8	108.1	128.0	108.9	105.3	124.1	137.7
1907	131.6	137.7	120.6	121.6	117.7	134.2	116.8	107.7	130.1	142.5

Year.	Pork, salt, bacon.	Pork, salt, dry or pickled.	Pork, salt, ham.	Potatoes, Irish.	Prunes.	Rice.	Sugar.	Tea.	Veal.	Vinegar.
1890	95.8	95.3	98.7	109.3	116.8	101.3	118.6	100.0	98.8	102.9
1891	96.6	98.9	99.3	116.6	116.5	102.5	102.7	100.4	99.6	105.5
1892	99.1	100.5	101.9	95.7	113.5	101.3	96.2	100.2	100.0	102.7
1893	109.0	108.7	109.3	112.3	115.6	98.4	101.5	100.1	100.0	99.5
1894	103.6	103.4	101.9	102.6	100.9	99.0	93.8	98.7	98.7	99.8
1895	99.4	99.2	98.8	91.8	94.2	98.8	91.8	98.5	98.5	98.9
1896	96.7	95.5	97.6	77.0	86.8	96.7	96.6	98.8	99.5	97.2
1897	97.4	97.3	98.2	93.0	84.3	97.9	95.7	98.5	99.9	97.4
1898	100.2	99.1	95.1	105.4	86.3	101.7	101.3	100.7	101.2	97.9
1899	102.9	101.8	99.2	96.1	85.1	102.4	101.7	104.4	103.7	98.3
1900	109.7	107.7	105.3	93.5	83.0	102.4	104.9	105.5	104.9	98.5
1901	121.0	117.5	110.2	116.8	82.6	103.5	103.0	106.7	108.8	98.9
1902	135.6	132.5	119.4	117.0	83.4	103.5	96.0	107.2	115.2	99.5
1903	139.8	129.0	121.3	114.8	80.2	103.9	96.1	106.0	114.9	99.1
1904	137.9	125.8	118.4	121.3	79.6	101.6	101.9	105.8	115.5	98.9
1905	138.8	126.0	118.5	110.2	81.4	102.6	103.9	105.7	117.7	100.3
1906	150.4	136.9	127.2	114.4	85.1	105.7	98.2	105.5	123.2	102.6
1907	157.3	141.2	130.7	120.6	88.4	108.5	99.6	105.3	125.0	104.5

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In this table, as in the preceding tables of relative prices, the average price for the ten-year period, 1890 to 1899, equals 100.0. The figures in the column for evaporated apples, for instance, indicate that the price for evaporated apples in 1890 was 109.0 per cent of the average price for 1890 to 1899, or 9.0 per cent above that average price. The price of evaporated apples in 1907 was 124.6 per cent of the average price for 1890 to 1899, or 24.6 per cent above that average price.

The price of fresh roasting beef in 1890 was 99.5 per cent of the average price during the ten-year period from 1890 to 1899. In 1891 the price was exactly the same as the average price for the ten-year period—that is, 100.0. The lowest point reached was in 1894, when it was 98.3 per cent of the average price for the ten-year period. The highest point reached was in 1907, when it stood at 119.1, or 19.1 per cent higher than the average price for the period from 1890 to 1899.

In the use of these tables showing the relative figures it should be borne in mind that the difference between the relative prices in any two years is not the per cent of difference in the cost. For example, the relative price of fresh roasting beef was 98.3 in 1894 and 119.1 in 1907. The difference between these relative prices is 20.8, and this figure being 21.2 per cent of 98.3, the per cent of increase in 1907 over 1894 is 21.2 per cent.

The table which follows is drawn from the above table and shows the articles for which the price in 1907 was higher than the average price for the ten-year period, 1890 to 1899, and also the articles for which the price in 1907 was lower than the average for 1890 to 1899.

RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, 1907, COMPARED WITH AVERAGE PRICE FOR 1890–1899.

[Average price for 1890–1899=100.0.]

Articles for which the average price in 1907 was higher than the average for 1890–1899.	Relative price, 1907.	Articles for which the average price in 1907 was lower than the average for 1890–1899.	Relative price, 1907.
Bread, wheat	104.5	Sugar	99.6
Vinegar	104.5	Coffee	95.0
Tea	105.3	Prunes	88.4
Molasses	107.7		
Rice	108.5		
Beef, salt	114.1		
Milk, fresh, unskimmed	116.8		
Flour, wheat	117.7		
Beans, dry	118.8		
Beef, fresh, roasts	119.1		
Beef, fresh, steaks	120.6		
Fish, fresh	120.6		
Potatoes, Irish	120.6		
Fish, salt	121.6		
Cheese	123.2		
Apples, evaporated	124.6		
Veal	125.0		
Butter	127.6		
Mutton	130.1		
Pork, salt, ham	130.7		
Chickens (year or more old), dressed	131.4		
Corn meal	131.6		
Lard	134.2		
Eggs	137.7		
Pork, salt, dry or pickled	141.2		
Pork, fresh	142.5		
Pork, salt, bacon	157.3		

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This table shows that the price of each of the articles except sugar, coffee, and prunes was higher in 1907 than the average price for the ten-year period, 1890 to 1899. The price of bacon was 57.3 per cent higher; fresh pork, 42.5 per cent higher; dry or pickled pork, 41.2 per cent higher; eggs, 37.7 per cent higher, etc. The price of only three articles was lower in 1907 than the average for the ten-year period, 1890 to 1899. Prunes were 11.6 per cent lower; coffee, 5.0 per cent lower, and sugar 0.4 per cent lower.

The preceding table is summarized in the short table which follows:

NUMBER AND PER CENT OF THE PRINCIPAL ARTICLES OF FOOD, CLASSIFIED BY PER CENT WHICH THE 1907 RETAIL PRICE IS ABOVE OR BELOW THE AVERAGE PRICE FOR 1890-1899.

Price higher.	Number of articles.	Per cent of articles.	Price lower.	Number of articles.	Per cent of articles.
40 per cent or over	3	10.0	Less than 10 per cent	2	6.7
25 to 40 per cent	8	26.7	10 to 25 per cent	1	3.3
10 to 25 per cent	11	36.7			
Less than 10 per cent	5	16.6			
Total	27	90.0	Total	3	10.0

From this table it is seen that in 1907 the price of 3 of the 30 articles, or 10.0 per cent of the total, was more than 40 per cent higher than the average price for the ten-year period, 1890 to 1899; the price of 8 articles, or 26.7 per cent of the total, was from 25 to 40 per cent higher than the average price for the ten-year period; the price of 11 articles, or 36.7 per cent of the total, was from 10 to 25 per cent higher than the average price for the ten-year period, and the price of 5 articles, or 16.6 per cent of the total, was less than 10 per cent higher than the average price for the ten-year period. On the other hand, the price of 2 articles, or 6.7 per cent of the whole number, was less than 10 per cent lower than the average price for the ten-year period, and the price of 1 article, or 3.3 per cent of the whole number, was from 10 to 25 per cent (11.6 per cent) lower than the average price for the ten-year period.

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The following table compares for each article the price in December, 1907, with the average price for the ten-year period, 1890 to 1899:

RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, DECEMBER, 1907, COMPARED WITH AVERAGE PRICE FOR 1890-1899.

[Average price for 1890-1899=100.0.]

Articles for which the average price in December, 1907, was higher than the average for 1890-1899.	Relative price, December, 1907.	Articles for which the average price in December, 1907, was lower than the average for 1890-1899.	Relative price, December, 1907.
Tea	105.2	Sugar	99.6
Bread, wheat	105.7	Coffee	95.3
Vinegar	105.7	Prunes	90.2
Molasses	108.5		
Rice	109.1		
Beef, salt	114.8		
Beef, fresh, roasts	117.6		
Beef, fresh, steaks	119.9		
Potatoes, Irish	120.1		
Fish, salt	123.0		
Beans, dry	123.3		
Milk, fresh, unskimmed	124.2		
Flour, wheat	124.8		
Fish, fresh	125.4		
Veal	125.8		
Pork, salt, ham	127.0		
Cheese	129.7		
Chickens (year or more old), dressed	130.6		
Mutton	131.1		
Apples, evaporated	131.9		
Lard	132.7		
Pork, fresh	136.9		
Pork, salt, dry or pickled	137.7		
Corn meal	137.9		
Butter	138.7		
Pork, salt, bacon	155.2		
Eggs	176.9		

This table shows that in December, 1907, eggs were 76.9 per cent higher than the average price for the ten-year period from 1890 to 1899; bacon was 55.2 per cent higher than during the ten-year period, etc.

The only articles which show a decline in price are sugar, 0.4 per cent; coffee, 4.7 per cent, and prunes, 9.8 per cent.

The table which follows summarizes the above table:

NUMBER AND PER CENT OF THE PRINCIPAL ARTICLES OF FOOD, CLASSIFIED BY PER CENT WHICH THE DECEMBER, 1907, RETAIL PRICE IS ABOVE OR BELOW THE AVERAGE PRICE FOR 1890-1899.

Price higher.	Number of articles.	Per cent of articles.	Price lower.	Number of articles.	Per cent of articles.
40 per cent or over	2	6.7	Less than 10 per cent	3	10.0
25 to 40 per cent	12	40.0			
10 to 25 per cent	8	26.7			
Less than 10 per cent	5	16.6			
Total	27	90.0	Total	3	10.0

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From this table it is seen that in December, 1907, the price of 2, or 6.7 per cent of the total of the 30 articles, was more than 40 per cent higher than the average price for the ten-year period, 1890 to 1899. The price of 12 articles, or 40 per cent of the total, was from 25 to 40 per cent higher than the average price for the ten-year period, etc.

A table follows which shows for the United States the lowest and highest yearly relative price of each of the 30 articles of food during the eighteen years, 1890 to 1907, and the year in which the lowest and highest yearly prices were reached:

LOWEST AND HIGHEST YEARLY RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, 1890 TO 1907.

[Average price for 1890–1899=100.0.]

Article.	Lowest.		Highest.	
	Year.	Relative price.	Year.	Relative price.
Apples, evaporated	1897	87.8	1907	124.6
Beans, dry	1897	91.5	1907	118.8
Beef, fresh, roasts	1894	98.3	1907	119.1
Beef, fresh, steaks	1894	98.2	1907	120.6
Beef, salt	1890	97.5	1902	116.0
Bread, wheat	1901, 1902	99.4	1905, 1907	104.5
Butter	1896	92.7	1907	127.6
Cheese	1898	97.5	1907	123.2
Chickens (year or more old), dressed	1897	94.0	1907	131.4
Coffee	1903	89.3	1890	105.4
Corn meal	1897	93.7	1907	131.6
Eggs	1897	91.4	1907	137.7
Fish, fresh	1890	99.3	1907	120.6
Fish, salt	1897	95.2	1907	121.6
Flour, wheat	1894	88.7	1904, 1905	119.9
Lard	1897	89.8	1902	134.3
Milk, fresh, unskimmed	1899	98.9	1907	116.8
Molasses	1897	97.7	1907	107.7
Mutton	1894	97.8	1907	130.1
Pork, fresh	1890	97.0	1907	142.5
Pork, salt, bacon	1890	95.8	1907	157.3
Pork, salt, dry or pickled	1890	95.3	1907	141.2
Pork, salt, ham	1898	95.1	1907	130.7
Potatoes, Irish	1896	77.0	1904	121.3
Prunes	1904	79.6	1890	116.8
Rice	1896	96.7	1907	108.5
Sugar	1895	91.8	1890	118.6
Tea	1895, 1897	98.5	1902	107.2
Veal	1895	98.5	1907	125.0
Vinegar	1896	97.2	1891	105.5

Of the 30 articles the lowest yearly relative price was reached by 5 in 1890, 4 in 1894, 2 in 1895, 1 in 1895 and 1897 (the price being the same for the two years), 4 in 1896, 8 in 1897, 2 in 1898, 1 in 1899, 1 in 1901 and 1902, 1 in 1903, and 1 in 1904. The highest yearly relative price was reached by 3 in 1890, 1 in 1891, 3 in 1902, 1 in 1904, 1 in 1904 and 1905, 1 in 1905 and 1907, and 20 in 1907. Thus the highest yearly price of the eighteen-year period was reached by two-thirds of the 30 articles during the last year.

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Certain of the articles included in this investigation are related to each other in such a way as to make a comparison of the course of prices of such articles very interesting. These groups of related articles are shown in the table which follows:

RELATIVE RETAIL PRICES IN THE UNITED STATES OF CERTAIN GROUPS OF RELATED ARTICLES OF FOOD, 1890 TO 1907.

[Average price for 1890–1899=100.0.]

Year.	Cattle products.			Dairy products.		
	Beef, fresh, roasts.	Beef, fresh, steaks.	Beef, salt.	Milk, fresh, unskimmed.	Butter.	Cheese.
1890	99.5	98.8	97.5	100.5	99.2	98.8
1891	100.0	99.4	98.3	100.5	106.4	100.3
1892	99.6	99.3	99.5	100.6	106.8	101.5
1893	99.0	99.6	100.3	100.4	109.9	101.8
1894	98.3	98.2	98.9	100.2	101.7	101.6
1895	98.6	99.1	99.6	100.0	97.0	99.2
1896	99.1	99.5	99.8	99.9	92.7	97.9
1897	100.3	100.2	100.9	99.7	93.1	99.0
1898	101.7	102.0	102.1	99.4	95.1	97.5
1899	103.7	103.9	103.2	98.9	97.7	102.4
1900	106.5	106.4	103.7	99.9	101.4	103.9
1901	110.7	111.0	106.1	101.1	103.2	103.3
1902	118.6	118.5	116.0	103.3	111.5	107.3
1903	113.1	112.9	108.8	105.8	110.8	109.4
1904	112.8	113.4	108.3	106.3	109.0	107.4
1905	112.2	112.9	107.9	107.0	112.7	110.9
1906	115.7	116.5	110.8	108.9	118.2	115.5
1907	119.1	120.6	114.1	116.8	127.6	123.2

Year.	Hog products.					Flour and bread.	
	Pork, fresh.	Pork, salt, bacon.	Pork, salt, dry or pickled.	Pork, salt, ham.	Lard.	Flour, wheat.	Bread, wheat.
1890	97.0	95.8	95.3	98.7	98.2	109.7	100.3
1891	98.7	96.6	98.9	99.3	99.8	112.5	100.3
1892	100.5	99.1	100.5	101.9	103.6	105.1	100.3
1893	107.0	109.0	108.7	109.3	117.9	96.1	100.1
1894	101.8	103.6	103.4	101.9	106.9	88.7	99.9
1895	99.7	99.4	99.2	98.8	100.1	89.0	99.7
1896	97.4	96.7	95.5	97.6	92.5	92.7	99.9
1897	97.6	97.4	97.3	98.2	89.8	104.3	100.0
1898	98.6	100.2	99.1	95.1	93.9	107.4	99.8
1899	101.7	102.9	101.8	99.2	97.1	94.6	99.6
1900	107.7	109.7	107.7	105.3	104.4	94.3	99.7
1901	117.9	121.0	117.5	110.2	118.1	94.4	99.4
1902	128.3	135.6	132.5	119.4	134.3	94.9	99.4
1903	127.0	139.8	129.0	121.3	126.7	101.2	100.2
1904	124.0	137.9	125.8	118.4	117.3	119.9	103.9
1905	126.6	138.8	126.0	118.5	116.6	119.9	104.5
1906	137.7	150.4	136.9	127.2	128.0	108.1	102.3
1907	142.5	157.3	141.2	130.7	134.2	117.7	104.5

Under cattle products are shown the three articles, beef, fresh, roasts; beef, fresh, steaks, and beef, salt. The price of each of these three articles was higher in 1891 than in 1890; that of the two descriptions of fresh beef was lower, and that of salt beef was higher in 1892 than in 1891; prices of roasts were lower and of steaks and salt beef higher in 1893 than in 1892; all three of the articles show lower prices in 1894 than in 1893; in each year from 1895 to 1902, inclusive, the price of each of the 3 articles increased; all were

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lower in 1903 than in 1902; prices of roasts and salt beef were lower and steaks higher in 1904 than in 1903; the price of each of these 3 articles was lower in 1905 than in 1904; the prices of all were higher in 1906 than in 1905; and the prices of all were higher in 1907 than in 1906.

In the group of hog products, all of the 5 articles take the same course in each of the six years, 1891 to 1896; in 1897 all except lard were higher than in 1896; in 1898 all except salt ham were higher than in 1897; in each of the four years, 1899 to 1902, all of the 5 articles were higher than in the year immediately preceding; in 1903 fresh pork, dry or pickled pork, and lard were lower, while bacon and ham were higher than in 1902; in 1904 all were lower than in 1903; in 1905 all except lard were higher than in 1904; in 1906 all were higher than in 1905; and in 1907 all were higher than in 1906.

WHOLESALE AND RETAIL PRICES OF FOOD.

In connection with this report on retail prices it is interesting to compare the course of wholesale prices with the course of retail prices. Retail prices usually follow the wholesale but do not always vary in the same proportion. The table which follows shows the relative wholesale prices of food (simple averages of 53 articles from 1890 to 1892 and 1904 to 1907, and of 54 articles from 1893 to 1903) and the relative retail prices of food (simple averages of 30 articles). The figures for wholesale prices are from Bulletin No. 75 of this Bureau.

RELATIVE WHOLESALE AND RETAIL PRICES OF FOOD IN THE UNITED STATES, 1890 TO 1907.

[The wholesale prices are from Bulletin No. 75 of the Bureau of Labor and are simple averages of 53 articles from 1890 to 1892 and 1904 to 1907, and of 54 articles from 1893 to 1903. The retail prices are simple averages of 30 articles. Average price for 1890–1899=100.0.]

Year.	Relative wholesale prices of food.	Relative retail prices of food.	Year.	Relative wholesale prices of food.	Relative retail prices of food.
1890	112.4	102.1	1899	98.3	99.6
1891	115.7	103.4	1900	104.2	101.5
1892	103.6	101.8	1901	105.9	105.5
1893	110.2	104.1	1902	111.3	110.9
1894	99.8	100.3	1903	107.1	110.9
1895	94.6	98.2	1904	107.2	111.6
1896	83.8	95.8	1905	108.7	112.5
1897	87.7	96.3	1906	112.6	116.2
1898	94.4	98.5	1907	117.8	120.7

The facts presented in this table are clearly shown in the graphic table on the following page. It will be observed that in this graphic table the simple average of retail prices is used, while in the graphic table on page 186 the weighted average of retail prices is used.

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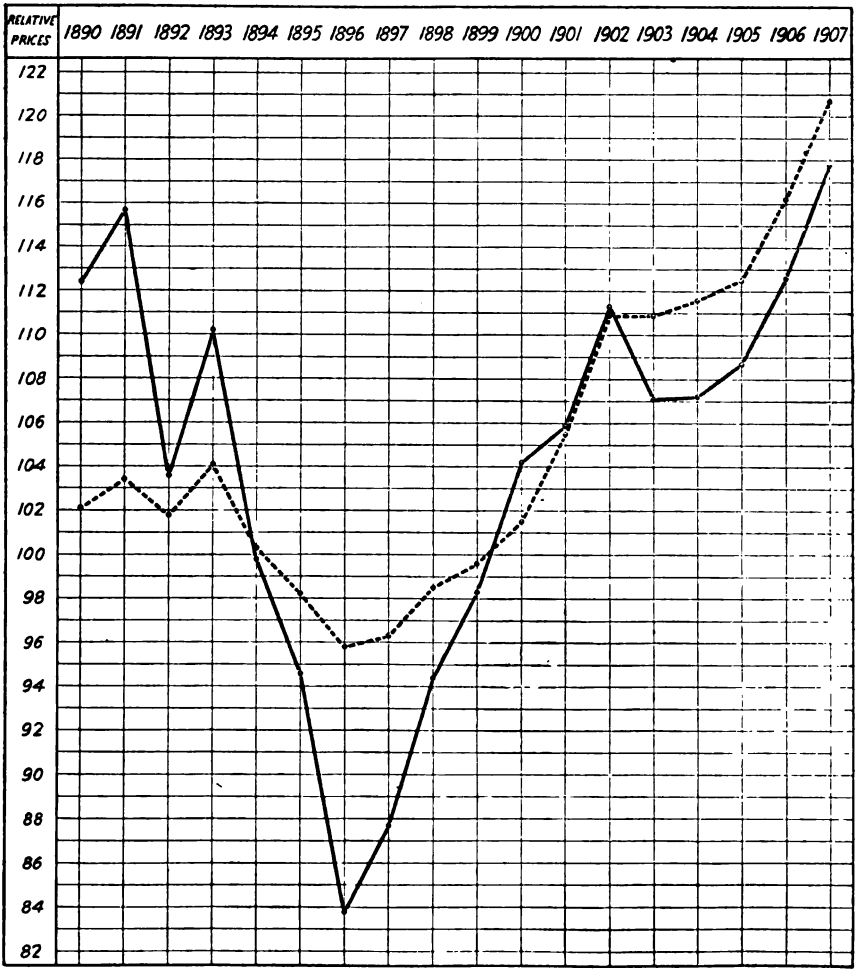
RELATIVE WHOLESALE AND RETAIL PRICES OF FOOD IN THE UNITED STATES, SIMPLE AVERAGES, 1890 TO 1907.

[Average price for 1890 to 1899=100.0.]



From this table it is seen that both wholesale and retail prices of food were higher in 1891 than in 1890, the wholesale, however, showing a much greater advance; both wholesale and retail prices were lower in 1892 than in 1891, the decline being much greater in wholesale than in retail; both were higher in 1893 than in 1892; both lower in 1894 than in 1893; both lower in 1895 than in 1894; both lower in 1896 than in 1895, the decline in wholesale being much greater than in retail; both were higher in each of the years from 1897 to 1902 than in the year immediately preceding; wholesale prices were lower in 1903 than in 1902, while retail prices remained on the same level; wholesale prices were slightly higher in 1904 than in 1903, while

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retail prices made a more marked advance; both wholesale and retail prices were higher in 1905 than in 1904, both higher in 1906 than in 1905, and both higher in 1907 than in 1906.

RETAIL PRICES AND COST OF LIVING.

The significance of the changes in the retail prices of food will be better understood possibly if taken in connection with certain information in regard to detailed family expenditures covering the entire cost of living, furnished by 2,567 workingmen's families in 1901 and published in the Eighteenth Annual Report of this Bureau. If it be assumed that the expenditure for each of the various articles bore the same relation to the total expenditure for food in each of the other years of the eighteen-year period covered by this investigation as in 1901, the average cost for food per family in 1907 was $374.75, against $296.76 in 1896, the year of lowest prices, and against an expenditure of $359.53 in 1906, a difference between 1896 and 1907 of $77.99, or 26.3 per cent. The increase in 1907 over 1906 was $15.22, or 4.2 per cent.

The table which follows shows by geographical divisions the average food cost per family each year from 1890 to 1907. This table is based on the average food cost per family in 1901 as reported by the families investigated in each geographical division, and the course of relative retail prices of food in each geographical division weighted according to family consumption in that division.

In each of the geographical divisions, and in the United States as a whole, it is considered in this table that the expenditure for each of the various articles bore the same relation to the total expenditure for food in each of the other years of the eighteen-year period covered by this investigation as in 1901.

The table follows:

AVERAGE FOOD COST PER WORKINGMAN'S FAMILY, BY GEOGRAPHICAL DIVISIONS, FOR EACH YEAR, 1890 TO 1907.

[Based on the average cost per family in 1901 and the course of retail prices of food as indicated by the relative prices weighted according to family consumption.]

Year.	North Atlantic division, 1,415 families.	South Atlantic division, 219 families.	North Central division, 721 families.	South Central division, 122 families.	Western division, 90 families.	United States, 2,567 families.
1890	$330.35	$282.72	$310.08	$279.54	$332.61	$318.20
1891	333.26	285.23	316.75	283.64	335.72	322.55
1892	329.70	282.44	308.57	275.71	324.90	316.65
1893	337.13	288.30	319.48	283.37	317.80	324.41
1894	320.34	279.36	304.93	273.79	306.68	309.81
1895	315.50	275.73	297.05	268.59	298.65	303.91
1896	313.23	270.42	286.74	263.11	287.84	296.76
1897	312.91	271.26	289.77	266.40	286.29	299.24
1898	319.05	277.41	298.26	270.50	294.01	306.70
1899	321.31	280.76	299.78	273.51	304.21	309.19
1900	326.80	286.07	305.54	276.80	302.97	314.16
1901	338.10	298.64	321.60	292.68	308.53	326.90
1902	356.83	312.33	338.57	310.75	322.43	344.61
1903	355.54	310.65	336.45	310.75	320.27	342.75
1904	360.70	312.61	339.79	314.86	323.97	347.10
1905	362.00	315.68	342.82	317.32	326.44	349.27
1906	370.72	324.62	353.12	325.81	340.03	359.53
1907	385.57	341.66	367.37	341.14	358 87	374.75

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From this table it is seen that in the North Atlantic division the average food cost per family (assuming that food was purchased in the same quantity each year and that the expenditure for each of the various articles bore the same relation to the total expenditure for food in each of the years) was $330.35 in 1890, $333.26 in 1891, etc. The lowest cost was $312.91 in 1897, and the highest was $385.57 in 1907, a difference of $72.66.

For the United States, considered as a whole, the average cost of food per family in 1890 was $318.20. In 1896, the year of lowest prices, it fell to $296.76; in 1907 it reached the highest point of the period, being $374.75.

The changes in the cost of living, as shown by this table, relate to food alone, representing 42.54 per cent of all family expenditures in the 2,567 families furnishing information relative to cost of living.

The table which follows shows for the United States the average cost of a year's food supplies in representative workingmen's families if purchased at the prices for the specified month of 1905, 1906, and 1907. This table is based on the average food cost per family in 1901 as reported by the 2,567 families investigated. In computing this table it was considered that the expenditure for each of the various articles bore the same relation to the total expenditure for food in each month of 1905, 1906, and 1907 as in the year 1901.

AVERAGE COST OF A YEAR'S FOOD SUPPLIES PER WORKINGMAN'S FAMILY IF PURCHASED AT THE PRICES FOR EACH SPECIFIED MONTH, 1905 TO 1907.

[Based on the average cost per family in 1901 and the course of retail prices of food as indicated by the relative prices weighted according to family consumption.]

Month.	1905.	1906.	1907.
January	$359.22	$363.57	$377.86
February	359.53	361.08	376.31
March	353.62	357.35	371.65
April	348.03	353.93	367.61
May	343.68	350.83	365.43
June	341.19	350.83	366.05
July	340.88	352.07	367.92
August	342.12	353.62	370.71
September	343.99	357.97	376.31
October	348.34	363.88	383.45
November	353.62	371.03	385.94
December	358.28	376.62	388.43
Year	349.27	359.53	374.75

The average cost at December, 1907, prices of a year's food supplies per family (assuming that food was purchased in the same quantity and that the expenditure for each of the various articles bore the same relation to the total expenditure for food as in the year 1901) was $388.43; which was an advance of $11.81 over the average cost of a year's supplies at December, 1906, prices, and an advance of $30.15 over December, 1905, prices. The lowest point reached during the three years was $340.88, the average cost of a year's food

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supplies at July, 1905, prices. By referring to the table on page 197 comparison may be made with each of the years since 1890.

For a comparison of the relative advance of retail prices of food with wages in the manufacturing and mechanical industries the reader is referred to the article on "Wages and hours of labor," pages 1 to 180 of this Bulletin. As has been mentioned in previous numbers of the Bulletin, the increased cost of food has been felt by everyone, and perhaps more keenly by employees on salaries, as the general tendency is to advance employees on salaries less rapidly than those employed by the day or week or whose services are contracted for at frequent intervals.

The table which follows shows for 20 articles of food the amount which could have been bought for one dollar in each of the years, 1890 to 1907.

The table is based on the average price reported paid by the 2,567 families in 1901, the quantities for the other years being calculated from the relative retail prices for each of the articles. Flour and meal were combined on the family budgets; therefore the average price reported for these two articles by the retail merchants was used in computing the number of pounds of each which could have been bought for one dollar.

No detailed description of the various articles can be given, but they were of the grade reported used by the 2,567 workingmen's families reporting expenditures in detail.

The table follows:

AMOUNT OF VARIOUS ARTICLES OF FOOD OF THE GRADE USED BY THE 2,567 WORKINGMEN'S FAMILIES REPORTING EXPENDITURES IN DETAIL, WHICH COULD HAVE BEEN BOUGHT FOR ONE DOLLAR IN EACH YEAR FROM 1890 TO 1907.

[Based on the average price paid by the 2,567 workingmen's families in 1901, and the course of retail prices.]

Year.	Fresh beef, pounds.	Salt beef, pounds.	Fresh pork, pounds.	Salt pork, pounds.	Poultry (chickens), pounds.	Fish, pounds.	Eggs, dozens.	Milk, quarts.	Butter, pounds.	Cheese, pounds
1890	7.81	10.06	9.89	9.58	7.25	10.09	5.33	16.74	4.23	6.39
1891	7.78	9.97	9.72	9.41	7.06	10.02	5.01	16.74	3.95	6.29
1892	7.79	9.85	9.55	9.20	7.08	9.97	5.02	16.72	3.93	6.22
1893	7.81	9.77	8.97	8.49	7.05	9.91	4.96	16.76	3.82	6.20
1894	7.89	9.91	9.43	8.98	7.45	9.99	5.56	16.79	4.13	6.21
1895	7.84	9.84	9.63	9.33	7.46	10.15	5.40	16.82	4.33	6.36
1896	7.81	9.82	9.84	9.58	7.56	10.20	5.77	16.84	4.53	6.45
1897	7.73	9.72	9.83	9.48	7.81	10.35	5.86	16.87	4.51	6.38
1898	7.61	9.60	9.73	9.43	7.50	10.12	5.57	16.92	4.42	6.47
1899	7.47	9.50	9.44	9.13	7.21	10.07	5.30	17.01	4.30	6.16
1900	7.28	9.45	8.91	8.60	7.29	10.11	5.36	16.84	4.14	6.07
1901	6.99	9.24	8.14	7.96	7.13	9.97	5.07	16.64	4.07	6.11
1902	6.54	8.45	7.48	7.16	6.49	9.71	4.50	16.29	3.77	5.88
1903	6.86	9.01	7.56	7.12	6.20	9.35	4.28	15.90	3.79	5.77
1904	6.85	9.05	7.74	7.26	6.08	9.19	4.09	15.83	3.85	5.88
1905	6.88	9.09	7.58	7.24	5.94	9.02	4.07	15.72	3.73	5.69
1906	6.68	8.85	6.97	6.69	5.69	8.66	3.99	15.45	3.55	5.46
1907	6.47	8.59	6.73	6.46	5.39	8.33	3.89	14.40	3.29	5.12

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AMOUNT OF VARIOUS ARTICLES OF FOOD OF THE GRADE USED BY THE 2,567 WORKINGMEN'S FAMILIES REPORTING EXPENDITURES IN DETAIL, WHICH COULD HAVE BEEN BOUGHT FOR ONE DOLLAR IN EACH YEAR FROM 1890 TO 1907—Concluded.

Year.	Lard, pounds.	Tea, pounds.	Coffee, pounds.	Sugar, pounds.	Molasses, gallons.	Flour, wheat, pounds.	Corn meal, pounds.	Bread, one-pound loaves.	Rice, pounds.	Potatoes, bushels.
1890	10.86	2.13	3.75	14.80	2.06	34.42	46.57	20.15	12.51	1.22
1891	10.69	2.13	3.76	17.09	2.12	33.56	42.45	20.15	12.36	1.14
1892	10.29	2.13	3.81	18.24	2.13	35.93	44.27	20.15	12.51	1.39
1893	9.05	2.13	3.77	17.29	2.14	39.29	45.17	20.19	12.87	1.19
1894	9.98	2.16	3.83	18.71	2.15	42.57	45.56	20.23	12.80	1.30
1895	10.65	2.17	3.89	19.12	2.18	42.43	46.20	20.27	12.82	1.45
1896	11.53	2.16	3.97	18.17	2.19	40.73	49.02	20.23	13.10	1.73
1897	11.88	2.17	4.18	18.34	2.21	36.20	49.70	20.21	12.94	1.43
1898	11.36	2.12	4.34	17.33	2.20	35.16	49.02	20.25	12.46	1.26
1899	10.98	2.04	4.37	17.26	2.20	39.92	48.97	20.29	12.37	1.39
1900	10.21	2.02	4.34	16.73	2.11	40.04	47.81	20.27	12.37	1.42
1901	9.03	2.00	4.36	17.04	2.13	40.00	43.48	20.33	12.24	1.14
1902	7.94	1.99	4.41	18.28	2.11	39.79	39.20	20.33	12.24	1.14
1903	8.42	2.01	4.43	18.26	2.08	37.31	38.58	20.17	12.19	1.16
1904	9.09	2.02	4.31	17.22	2.07	31.49	38.33	19.45	12.47	1.10
1905	9.15	2.02	4.22	16.89	2.07	31.49	38.11	19.34	12.35	1.21
1906	8.33	2.02	4.18	17.87	2.05	34.93	37.80	19.75	11.99	1.16
1907	7.95	2.03	4.16	17.62	2.00	32.08	35.39	19.34	11.68	1.10

From this table it is seen that the amount of fresh beef (of the grade consumed by the 2,567 families investigated) which could have been bought for $1 was 7.81 pounds in 1890, 7.78 pounds in 1891, 7.79 pounds in 1892, 7.81 pounds in 1893, 7.89 pounds in 1894, 7.84 pounds in 1895, 7.81 pounds in 1896, 7.73 pounds in 1897, 7.61 pounds in 1898, 7.47 pounds in 1899, 7.28 pounds in 1900, 6.99 pounds in 1901, 6.54 pounds in 1902, 6.86 pounds in 1903, 6.85 pounds in 1904, 6.88 pounds in 1905, 6.68 pounds in 1906, and 6.47 pounds in 1907.

EXPLANATION OF SCOPE AND METHOD.

The present report gives the results of an investigation of retail prices of 30 staple articles of food in 68 of the principal industrial cities in 39 States, including the District of Columbia, for the year 1907 and also summaries covering the eighteen-year period from 1890 to 1907. Previous investigations of retail prices have been made and published by the Bureau of Labor, as follows: Eighteenth Annual Report, covering 1890 to 1903; Bulletin No. 59 (July, 1905), covering 1904; Bulletin No. 65 (July, 1906), covering 1905; Bulletin No. 71 (July, 1907), covering 1906.

The investigation includes 6,087 schedules or statements of prices secured from 1,014 firms. In the Eighteenth Annual Report, the first of the series, were included 5,302 schedules from 814 retail merchants for the years 1890 to 1902, and 5,293 schedules from 811 merchants for the year 1903. The prices were secured in the principal industrial localities in 33 States, including the District of Columbia. In collecting the prices published in Bulletin No. 59 the scope of the investigation was enlarged and included 6,760 schedules from

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1,064 firms in 40 States. The report in Bulletin No. 65 included 6,193 schedules from 999 firms in 39 States, and the report in Bulletin 71 included 6,176 schedules from 993 firms in 39 States.

As far as possible 1907 prices were secured from those firms which furnished prices for previous years. Where a firm which had heretofore furnished prices to the Bureau was no longer in business, thus making it necessary to secure schedules from another firm in the same locality, or where schedules from additional firms were desired, prices were secured for both 1906 and 1907, so that in every case the 1906 and 1907 prices shown in this compilation are from the same firm.

The schedules were in all cases secured by personal visits of agents of the Bureau. The firms furnishing prices were those selling largely to workingmen. In this compilation prices are quoted for 30 distinct articles and under each article prices are shown for various grades and descriptions of that article. The articles for which retail prices are quoted in this report, the number of schedules or statements of prices secured for each article, and the number of cities and States in which the schedules were secured are shown in the table which follows:

ARTICLES FOR WHICH RETAIL PRICES ARE SHOWN, NUMBER OF SCHEDULES SECURED FOR EACH ARTICLE, AND NUMBER OF CITIES AND STATES IN WHICH THE SCHEDULES WERE SECURED FOR 1906 AND 1907.

Article.	Total schedules.	Cities in which secured.	States in which secured.
Apples, evaporated	156	68	39
Beans, dry	156	68	39
Beef, fresh, roasts	450	68	39
Beef, fresh, steaks	449	68	39
Beef, salt	157	67	38
Bread, wheat	221	68	39
Butter	227	68	39
Cheese	172	68	39
Chickens (year or more old), dressed	161	67	39
Coffee	174	68	39
Corn meal	171	68	39
Eggs	224	68	39
Fish, fresh	169	68	39
Fish, salt	161	68	39
Flour, wheat	221	68	39
Lard	176	68	39
Milk, fresh, unskimmed	219	68	39
Molasses	167	68	39
Mutton	163	68	39
Pork, fresh	223	68	39
Pork, salt, bacon	224	68	39
Pork, salt, dry or pickled	166	68	39
Pork, salt, ham	227	68	39
Potatoes, Irish	225	68	39
Prunes	156	68	39
Rice	169	68	39
Sugar	227	68	39
Tea	164	68	39
Veal	156	67	38
Vinegar	156	68	39
Total	6,087	68	39

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The 68 cities in which quotations of retail prices were secured are enumerated in the following table. The cities selected are so distributed that the prices fairly represent the prices to the consumers in the principal industrial localities in all parts of the country:

CITIES IN WHICH RETAIL PRICES WERE SECURED, NUMBER OF FIRMS FROM WHICH SECURED, AND NUMBER OF SCHEDULES OR QUOTATIONS OF PRICES SECURED.

Cities.	Number of firms from which quotations of prices were secured.	Number of schedules or quotations of prices secured.
Albany, N. Y.	13	78
Atlanta, Ga.	17	89
Baltimore, Md.	24	118
Birmingham, Ala.	12	78
Boston, Mass.	31	111
Buffalo, N. Y.	27	122
Butte, Mont.	8	75
Charleston, S. C.	21	84
Chicago, Ill.	21	150
Cincinnati, Ohio.	22	113
Cleveland, Ohio.	18	119
Dallas, Tex.	15	79
Denver, Colo.	11	83
Des Moines, Iowa.	7	78
Detroit, Mich.	13	78
Dubuque, Iowa.	12	80
Duluth, Minn.	10	80
Fall River, Mass.	16	78
Grand Rapids, Mich.	12	87
Indianapolis, Ind.	13	83
Jacksonville, Fla.	21	101
Jersey City, N. J.	16	78
Kansas City, Mo.	13	77
Little Rock, Ark.	13	77
Los Angeles, Cal.	13	78
Louisville, Ky.	16	81
Lynn, Mass.	5	75
Malden, Mass.	14	79
Manchester, N. H.	6	80
Memphis, Tenn.	16	87
Milwaukee, Wis.	13	84
Minneapolis, Minn.	9	84
Montgomery, Ala.	16	79
Nashville, Tenn.	15	77
New Haven, Conn.	12	84
New Orleans, La.	27	105
New York (Brooklyn), N. Y.	15	122
New York (Manhattan), N. Y.	26	181
Norfolk, Va.	12	79
Omaha, Nebr.	9	78
Peoria, Ill.	12	82
Philadelphia, Pa.	39	148
Pittsburg (Allegheny), Pa.	10	78
Pittsburg (Pittsburg), Pa.	6	78
Portland, Me.	14	79
Portland, Oreg.	15	80
Providence, R. I.	16	84
Richmond, Va.	19	86
Rochester, N. Y.	14	84
St. Louis, Mo.	14	114
St. Paul, Minn.	10	78
Salt Lake City, Utah.	14	80
San Antonio, Tex.	13	77
San Francisco, Cal.	24	132
Scranton, Pa.	16	79
Seattle, Wash.	12	80
Sioux Falls, S. Dak.	11	78
Syracuse, N. Y.	11	78
Tacoma, Wash.	13	78
Terre Haute, Ind.	11	78
Toledo, Ohio.	14	78
Topeka, Kans.	10	76
Trenton, N. J.	11	83
Washington, D. C.	14	128
Wheeling, W. Va.	12	79
Wilkes-Barre, Pa.	19	77
Wilmington, Del.	15	81
Worcester, Mass.	15	78
Total.	1,014	6,187

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As stated in several places in the preceding pages, the weighted relative prices given in this report were computed from the relative prices of the several articles and the consumption of the several articles in workingmen's families as set forth in the Eighteenth Annual Report of this Bureau.

In preparing the Eighteenth Annual Report data were obtained from 2,567 families, including 13,643 persons, which were able to give an account of their expenditures in detail. Certain of the summary tables from that report are here reproduced because of their interest, and more especially because they are used in preparing several of the tables of this Bulletin article.

The table which follows shows, by geographical divisions, the total number of families reporting expenditures in detail, average size of family and average income, average expenditure for all purposes, and average expenditure for food per family for the year 1901:

NUMBER OF FAMILIES, AVERAGE SIZE OF FAMILY, AVERAGE INCOME PER FAMILY, AVERAGE EXPENDITURE PER FAMILY FOR ALL PURPOSES, AND AVERAGE EXPENDITURE PER FAMILY FOR FOOD, BY GEOGRAPHICAL DIVISIONS, 1901.

Geographical division.	Families.	Average size of family.	Average income per family.	Average expenditure per family for all purposes.	Average expenditure per family for food.
North Atlantic	1,415	5.25	$834.83	$778.04	$338.10
South Atlantic	219	5.30	762.78	700.62	298.64
North Central	721	5.46	842.60	785.95	321.60
South Central	122	5.65	715.46	690.11	292.68
Western	90	4.69	891.82	751.46	308.53
United States	2,567	5.31	827.19	768.54	326.90

The table which follows shows, for the 2,567 families reporting expenditures in detail, the average amount per family expended in one year for each of the principal items entering into the cost of living, and also the per cent which the amount expended for each item is of the total family expenditure:

AVERAGE EXPENDITURE OF 2,567 WORKINGMEN'S FAMILIES FOR EACH OF THE PRINCIPAL ITEMS ENTERING INTO COST OF LIVING, AND PER CENT OF AVERAGE TOTAL EXPENDITURE, 1901.

Items of expenditure.	Expenditure based on all families.	
	Average.	Per cent of total expenditure.
Food	$326.90	42.54
Rent	99.49	12.95
Mortgage:		
Principal	[a] 8.15	1.06
Interest	[b] 3.98	.52
Fuel	32.23	4.19
Lighting	8.15	1.06
Clothing:		
Husband	33.73	4.39
Wife	26.03	3.39
Children	48.08	6.26

[a] Including interest paid by 13 families.
[b] Not including interest paid by 13 families, included in principal.

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AVERAGE EXPENDITURE OF 2,567 WORKINGMEN'S FAMILIES FOR EACH OF THE PRINCIPAL ITEMS ENTERING INTO COST OF LIVING, AND PER CENT OF AVERAGE TOTAL EXPENDITURES, 1901—Concluded.

Items of expenditure.	Expenditure based on all families.	
	Average.	Per cent of total expenditure.
Taxes	$5.79	0.75
Insurance:		
Property	1.53	.20
Life	19.44	2.53
Organizations:		
Labor	3.87	.50
Other	5.18	.67
Religious purposes	7.62	.99
Charity	2.39	.31
Furniture and utensils	26.31	3.42
Books and newspapers	8.35	1.09
Amusements and vacation	12.28	1.60
Intoxicating liquors	12.44	1.62
Tobacco	10.93	1.42
Sickness and death	20.54	2.67
Other purposes	45.13	5.87
Total	768.54	100.00

The following table shows for each of the geographical divisions and for the United States the average quantity per family of certain principal articles of food consumed in one year. These averages are based on the families from which detailed statements were secured in each geographical division.

AVERAGE QUANTITY PER WORKINGMAN'S FAMILY OF CERTAIN PRINCIPAL ARTICLES OF FOOD CONSUMED IN 1901, BY GEOGRAPHICAL DIVISIONS.

Article.	Unit.	North Atlantic division, 1,415 families.	South Atlantic division, 219 families.	North Central division, 721 families.	South Central division, 122 families.	Western division, 90 families.	United States, 2,567 families.
Fresh beef	Pounds.	352.2	306.8	363.5	317.4	348.4	349.7
Salt beef	Pounds.	75.3	9.4	21.3	3.5	3.8	48.6
Fresh hog products	Pounds.	103.4	85.3	152.6	128.1	28.4	114.2
Salt hog products	Pounds.	95.2	222.0	87.3	248.7	76.6	110.5
Other meat	Pounds.	98.1	28.1	68.8	11.2	37.8	77.7
Poultry	Pounds.	67.2	73.6	71.3	53.0	53.5	67.7
Fish	Pounds.	98.9	66.1	56.5	39.5	57.5	79.9
Eggs	Dozens.	85.8	90.6	88.3	85.0	39.8	85.2
Milk	Quarts.	396.3	191.9	348.2	220.8	324.4	354.5
Butter	Pounds.	118.9	102.1	124.0	88.9	108.9	117.1
Cheese	Pounds.	15.9	15.2	17.4	18.9	3.8	16.0
Lard	Pounds.	73.8	119.5	89.1	143.3	48.5	84.4
Tea	Pounds.	12.9	8.2	8.5	4.9	5.6	10.6
Coffee	Pounds.	38.5	60.7	57.5	71.4	25.2	46.8
Sugar	Pounds.	282.8	240.4	253.1	245.8	267.2	268.5
Molasses	Gallons.	3.2	4.6	3.4	6.2	4.0	3.6
Flour and meal	Pounds.	624.0	851.8	718.2	979.5	452.3	680.8
Bread	Loaves.	310.2	197.0	165.6	199.8	255.2	252.7
Rice	Pounds.	22.2	49.1	21.8	47.2	10.3	25.1
Potatoes	Bushels.	13.8	11.1	18.3	13.3	10.3	14.7

Another table shows the average cost per family of the principal articles of food consumed in one year. These averages are based on the families from which detailed statements were secured in each of the geographical divisions.

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AVERAGE COST PER WORKINGMAN'S FAMILY OF THE PRINCIPAL ARTICLES OF FOOD CONSUMED IN 1901, BY GEOGRAPHICAL DIVISIONS.

Article.	North Atlantic division, 1,415 families.	South Atlantic division, 219 families.	North Central division, 721 families.	South Central division, 122 families.	Western division, 90 families.	United States, 2,567 families.
Fresh beef	$54.27	$41.08	$46.06	$37.84	$54.13	$50.05
Salt beef	8.18	1.13	2.20	.33	.66	5.26
Fresh hog products	12.83	10.48	18.39	15.60	4.04	14.02
Salt hog products	12.19	26.79	11.25	28.09	11.06	13.89
Other meat	12.26	3.86	8.68	1.40	5.35	9.78
Poultry	10.18	8.44	9.34	5.93	7.15	9.49
Fish	10.06	5.21	5.67	3.95	6.90	8.01
Eggs	18.44	15.55	15.24	13.20	11.01	16.79
Milk	24.29	13.02	19.67	12.25	20.46	21.32
Butter	29.77	25.76	28.48	21.74	31.81	28.76
Cheese	2.55	2.65	2.87	3.36	.69	2.62
Lard	8.15	12.72	10.34	14.31	5.44	9.35
Tea	6.33	4.40	4.22	2.69	3.43	5.30
Coffee	9.70	10.58	12.91	12.22	8.06	10.74
Sugar	16.67	14.15	14.63	15.70	14.49	15.76
Molasses	1.51	2.01	1.53	2.93	3.28	1.69
Flour and meal	16.24	21.10	16.47	22.68	8.85	16.76
Bread	15.41	9.34	8.11	9.55	11.93	12.44
Rice	1.94	2.77	1.92	3.70	.91	2.05
Potatoes	13.77	9.29	13.01	11.54	9.84	12.93
Other vegetables	16.08	20.75	22.03	16.62	35.41	18.85
Fruit	15.31	15.22	17.15	11.52	40.53	16.52
Vinegar, pickles, and condiments	4.06	3.21	4.80	4.41	1.49	4.12
Other food	17.91	19.13	26.63	21.12	11.61	20.40
Total	338.10	298.64	321.60	292.68	308.53	326.90

From the table just shown another table has been computed, showing the relative importance, as measured by the average family expenditure, of the principal articles of food consumed in one year. For the purpose of computing the relative importance of the various articles, the total value of food consumed is considered equal to 10,000. The table follows:

RELATIVE IMPORTANCE IN WORKINGMEN'S FAMILIES OF THE PRINCIPAL ARTICLES OF FOOD CONSUMED IN 1901, BY GEOGRAPHICAL DIVISIONS.

[Total value of food consumed=10,000.]

Article.	North Atlantic division, 1,415 families.	South Atlantic division, 219 families.	North Central division, 721 families.	South Central division, 122 families.	Western division, 90 families.	United States, 2,567 families.
Fresh beef	1,605	1,375	1,432	1,293	1,754	1,531
Salt beef	242	38	68	11	21	161
Fresh hog products	379	351	572	533	131	429
Salt hog products	361	897	350	960	359	425
Other meat	363	129	270	48	173	299
Poultry	301	283	290	203	232	290
Fish	298	174	176	135	224	245
Eggs	545	521	474	451	357	514
Milk	718	436	612	418	663	652
Butter	881	863	886	743	1,031	880
Cheese	75	89	89	115	22	80
Lard	241	426	322	489	176	286
Tea	187	147	131	92	111	162
Coffee	287	354	401	417	261	328
Sugar	493	474	455	536	470	482
Molasses	45	67	48	100	106	52
Flour and meal	480	706	512	775	287	513
Bread	456	313	252	326	387	381
Rice	57	93	60	126	30	63
Potatoes	407	311	405	394	319	395
Other vegetables	476	695	685	568	1,148	577
Fruit	453	510	533	394	1,314	505
Vinegar, pickles, and condiments	120	107	149	151	48	126
Other food	530	641	828	722	376	624
Total	10,000	10,000	10,000	10,000	10,000	10,000

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The relative prices or index numbers weighted according to family consumption shown in the preceding pages were computed by the use of this table, the several articles being given the weight or importance shown in the table.

Certain groupings of the articles for which retail prices were secured are necessary in order to bring them within the classification reported in the family budgets.

Fresh beef is represented by the two articles—one, roasts, and the other, steaks; salt hog products by the three articles—salt bacon, dry or pickled pork, and salt ham; other meat by the two articles—mutton and veal; poultry by the single article—chickens; fish by fresh fish and salt fish; flour and meal by wheat flour and corn meal. However, in obtaining an average index number to be used in weighting by relative importance, wheat flour is given twice the importance of corn meal. It would be necessary to give wheat flour even a greater weight as compared with corn meal but for the fact that bread is considered separately from flour and meal. Fruit is represented by two articles only—evaporated apples and prunes—as it was impossible to secure complete series of prices of other descriptions of fruits. Vinegar, pickles, and condiments are represented by the single article vinegar.

This list includes all articles for which retail prices were secured except beans. The groupings are as follows:

Fresh beef:
- Roasts.
- Steaks.

Salt beef.

Fresh hog products:
- Pork, fresh.

Salt hog products:
- Pork, salt, bacon.
- Pork, salt, dry or pickled.
- Pork, salt, ham.

Milk, fresh, unskimmed.

Butter.

Cheese.

Lard.

Tea.

Coffee.

Sugar.

Molasses.

Flour and meal:
- Flour, wheat (2).
- Corn meal (1).

Other meat:
- Mutton.
- Veal.

Poultry:
- Chickens (year or more old), dressed.

Fish:
- Fresh.
- Salt.

Eggs.

Bread.

Rice.

Potatoes.

Fruit:
- Apples, evaporated.
- Prunes.

Vinegar, pickles, and condiments:
- Vinegar.

Other food:
- The same index as for "total food, except meat."

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The figures showing the relative importance of the various articles of food are based on the family consumption for 1901. There is no doubt that the relative importance of articles varied slightly from year to year, but no figures are available covering the 18 years, therefore the relative consumption of the various articles of food is, in this study, considered the same for each of the years.

The method of computing the series of relative prices weighted according to family consumption, for each of the geographical divisions, and for the United States considered as a whole, can best be explained by illustrating the process.

The following table is for the United States for the year 1907:

TABLE ILLUSTRATING THE METHOD OF COMPUTING THE RELATIVE RETAIL PRICE OF FOOD IN THE UNITED STATES IN 1907, THE VARIOUS ARTICLES BEING WEIGHTED ACCORDING TO AVERAGE CONSUMPTION IN 2,567 WORKINGMEN'S FAMILIES.

Article.	Relative importance.	Relative price.	Result.
Fresh beef	1,531	119.9	183,566.9
Salt beef	161	114.1	18,370.1
Fresh hog products	429	142.5	61,132.5
Salt hog products	425	143.1	60,817.5
Other meat	299	127.6	38,152.4
Total meat	2,845	127.3	362,039.4
Poultry	290	131.4	38,106.0
Fish	245	121.1	29,669.5
Eggs	514	137.7	70,777.8
Milk	652	116.8	76,153.6
Butter	880	127.6	112,288.0
Cheese	80	123.2	9,856.0
Lard	286	134.2	38,381.2
Tea	162	105.3	17,058.6
Coffee	328	95.0	31,160.0
Sugar	482	99.6	48,007.2
Molasses	52	107.7	5,600.4
Flour and meal	513	122.3	62,739.9
Bread	381	104.5	39,814.5
Rice	63	108.5	6,835.5
Potatoes	395	120.6	47,637.0
Fruit	505	106.5	53,782.5
Vinegar, pickles, and condiments	126	104.5	13,167.0
Total, except meat	5,954	117.7	701,034.7
Other food	624	117.7	73,444.8
Meat	2,845	127.3	362,039.4
Grand total	9,423	120.6	1,136,518.9

The sum of the numbers indicating the relative importance of the various kinds of meat is 2,845, the relative importance in family consumption of all meat. The sum of the results which were obtained by multiplying the relative price of each of the kinds of meat by the number indicating its relative importance is 362,039.4. Therefore to obtain the relative price of the group, meat, for the United States in 1907, the sum of the results is divided by 2,845, the relative importance of the meat group. The quotient, 127.3, shows the relative price of the meat group in 1907 when weighted according to family consumption.

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Each of the remaining 17 articles or classes of articles is taken up in the same way as were the several kinds of meat, the relative price for the United States in 1907, as shown in Table III, being multiplied by the relative importance of the article, as shown in the table on page 205. For the group of 17 articles comprised in "total, except meat," the relative price, 117.7, was found in the same way as was the relative price for all meat, the sum of the results, 701,034.7, being divided by 5,954, the sum of the numbers indicating relative importance. One other group, designated "other food," remains to be considered. As the various descriptions of meat most generally used and also a class, "other meat," were included in the total meat, it is presumed that all meat was included in that total and that the food which in the family budgets was classed as "other food" must be more nearly related to the various articles considered in the group "total food, except meat," and therefore "other food" was given the same relative price as "total food, except meat."

The grand total of the numbers indicating relative importance was 9,423, and the sum of the results obtained by multiplying the relative price of each of the various articles considered by its relative importance was 1,136,518.9. The sum of the results divided by 9,423 is 120.6, the relative price of food for the United States in 1907, when the various articles are weighted according to the reported consumption in 2,567 families. The class "other vegetables" has a relative importance of 577, but it was impossible to collect retail prices of articles to represent properly this class for the sixteen years; hence it was not possible to include that class in this table, and therefore the grand total of relative importance, 9,423, lacks 577 of making the 10,000 total importance of food indicated in the table on page 205. That is, 94.23 per cent of the total food consumption per family is represented in this table.

It is interesting to see, from the table on page 185, that the relative price for 1907, weighted according to family consumption and including 94.23 per cent of the total food consumption, differed very little from the simple average of the 30 articles of food shown on the same page, the weighted price being 120.6 and the simple average 120.7. It should not be understood that the 30 articles for which retail prices were secured, and which are enumerated on page 201, comprise 94.23 per cent of the food consumed, but these articles represent groups or classes which do, according to the 2,567 family budgets, comprise 94.23 per cent of the food consumed.

The weighted relative price for the United States for each of the years from 1890 to 1906 was found in the same way as has been explained for 1907.

The same method was employed in computing the weighted relative prices for each of the five geographical divisions as for the United

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States. The relative importance of the various articles, or classes of articles, in the different geographical divisions is shown in the table on page 205.

The following table shows the average price per pound, dozen, quart, etc., in 1901, of various articles of food. One column shows the average price paid by the 2,567 workingmen's families investigated in the United States, as reported by the housewife or other member of the family—that is, the average amount paid per family for each article was divided by the average quantity of the article consumed. Another column shows the average price computed from the reports obtained from the retail merchants. The average price shown for fresh beef in the last column, for instance, is the simple average of the prices quoted on the 614 schedules for fresh beef; the average for salt beef is the simple average of the prices quoted on the 121 schedules for that article, etc.

AVERAGE PRICE PER POUND, DOZEN, QUART, ETC., OF CERTAIN PRINCIPAL ARTICLES OF FOOD, 1901.

Article.	Unit.	Average price—	
		Computed from 2,567 family budgets.	Computed from retail price schedules.
Fresh beef	Pound	$0.1431	$0.1470
Salt beef	Pound	.1082	.0931
Fresh hog products	Pound	.1228	.1300
Salt hog products	Pound	.1257	.1457
Other meat	Pound	.1259	.1430
Poultry	Pound	.1402	.1529
Fish	Pound	.1003	.1166
Eggs	Dozen	.1971	.2194
Milk	Quart	.0601	.0617
Butter	Pound	.2456	.2644
Cheese	Pound	.1638	.1634
Lard	Pound	.1108	.1190
Tea	Pound	.5000	.5455
Coffee	Pound	.2295	.2445
Sugar	Pound	.0587	.0587
Molasses	Gallon	.4694	.5136
Flour and meal	Pound	.0246	(a)
Bread	Loaf	.0492	.0545
Rice	Pound	.0817	.0837
Potatoes	Bushel	.8796	.9908

a Flour, $0.0250; corn meal, $0.0230.

It will be noticed that for all articles except four—salt beef, cheese, sugar, and flour and meal—the average price computed from the family budgets is less than the reports of retail merchants. In explanation of this difference two suggestions may be offered. The first is that when the price of any article of food advances there is a tendency on the part of the consumers to use some substitute for that article. Therefore, if an article is low for six months of the year and high for the remaining six months, the greater quantity consumed by the family may have been purchased during the months when the

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price was low, thus producing a lower average for the year than would the simple average of twelve monthly quotations. A second suggestion is that prices secured from retail merchants were usually for some standard grade or brand of article, while in some families investigated it is no doubt true that articles of a lower grade were purchased at times.

The methods employed in computing a relative price and in preparing the three general tables of this article are set forth under the next section, entitled "Explanation of tables."

EXPLANATION OF TABLES.

This report includes three general tables, as follows:

TABLE I.—Retail prices of food, 1906 and 1907.

TABLE II.—Relative retail prices of food, by months, 1905, 1906, and 1907.

TABLE III.—Relative retail prices of food, 1890 to 1907.

Table I.—Retail prices of food, 1906 and 1907 (pp. 215 to 320).—This table shows for each of the years, 1906 and 1907, the average price of the particular article enumerated in each separate schedule or statement of prices. The agents of the Bureau obtained from the retail merchants the prevailing price for the various articles of food during each month of the two years. The monthly prices of the various articles are not published in detail owing to the amount of space that would be required; but from these monthly prices an average price for each year has been computed for each schedule or separate statement of prices. The average price for the year is a simple average, found by adding together the 12 monthly quotations of prices for each article for the year and dividing by 12. For the few schedules in which the price was not quoted for all months in the year the average was obtained by dividing the sum of the monthly prices quoted by the number of such quotations. The 30 articles are presented in alphabetical order, the prices for each article being shown under each State, by localities, in which secured.

The particular grade or description of each article is shown in connection with the average prices. Great care was taken to secure prices throughout the two years for an article of uniform grade or quality, as changes in quality are of course reflected in prices. A reference to Table I (p. 215) shows that the first article is "Apples, evaporated," and the first line shows the average price computed from monthly statements of the price of evaporated apples as sold by a certain retail merchant in Birmingham, Ala. The third column shows the average price per pound, 12.50 cents, in 1906; the fourth column the average price per pound, 14.17 cents, in 1907. The second line presents the average price of evaporated apples computed from

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statements of monthly prices furnished by a certain other retail merchant in Birmingham, Ala. The third line shows the price of evaporated apples computed from statements of monthly prices furnished by a certain retail merchant in Montgomery, Ala., etc.

For evaporated apples 156 statements of prices are shown. These statements were obtained in 68 cities in 39 States. For dry beans 156 statements of prices are shown. For fresh beef, roasts, 450 statements are shown. The number of statements of prices, or schedules, shown for each of the 30 articles may be seen by reference to the table on page 201.

In some localities the weight of a loaf of bread is fixed by statute; but in many other localities the weight of a loaf varies to some extent with the fluctuations in the price of flour. For this reason the portion of Table I relating to bread shows the weight of the loaf for which the statement of prices was secured, the average price per loaf for 1906 and 1907, and the computed average price per pound (after baking) for each of the two years. A loaf of bread is the usual unit of purchase, but in comparing 1907 and 1906 prices the price per pound should be used in preference to the price per loaf when the weight per loaf has changed.

Table II.—Relative retail prices of food, by months, 1905, 1906, and 1907 (pp. 321 and 322).—This table shows for each month of 1905, 1906, and 1907 the relative price for each of the 30 articles of food included in this compilation. This table was not included in the reports on retail prices published by the Bureau until last year.

As the first step in computing the relative prices in this table all of the several actual price quotations for an article in a month were added and the sum divided by the number of quotations, giving the average actual price for the month. The relative price for the month was then found by proportion, using the average actual price for the year and the relative price for the year as the other two terms of the proportion. The method of obtaining the average actual price for the year has been explained under Table I. The method of obtaining the relative price for the year is explained under Table III.

As an example, the average actual price of the 156 quotations for evaporated apples in January, 1907, was 12.65 cents, the average actual price for the year was 13.19 cents, and the relative price for the year, as taken from Table III, was 124.6, giving the proportion $13.19:12.65::124.6:x$. From this proportion it is found that the relative price (x) for evaporated apples in January was 119.5.

Table III.—Relative retail prices of food, 1890 to 1907 (pp. 323 to 332).—In the Eighteenth Annual Report of this Bureau were shown the relative retail prices for each of the fourteen years, from 1890 to 1903, for each of the 30 articles of food included in that report. In Bulletin No. 59 those relative prices were extended to include 1904; in Bulletin

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No. 65, to include 1905; in Bulletin No. 71, to include 1906, and in the present compilation they are extended to include 1907.

As explained on a previous page, a relative price, or an index number, as it is technically called, of any article is the per cent which the price of that article at any certain date is of the price of the same article at a date or a period which has been selected as the base or standard.

The base selected for the compilation of retail prices is the average price for the 10-year period, 1890 to 1899. This base period is the same as was used in the several presentations of wholesale prices in bulletins of this Bureau and in the preceding bulletins on wages and hours of labor and retail prices. The average for the 10-year period is used as the base for the reason that an average price for a number of years more nearly represents average or normal conditions than does the price for a single year, because of unusual conditions that may prevail in any one year.

The value of the relative price is that it enables the reader to follow more readily the course of prices of a single article or of groups of articles; and also that it permits the continuation of a price series when, for any reason, quotations from one firm are discontinued and quotations from another firm for a different quality or brand of article are secured instead, which article, though differing somewhat from the one formerly quoted, equally well represents the trend of the general market.

In the Eighteenth Annual Report relative prices were computed for each of the schedules of prices. The method followed after computing the average price for each year was to determine for each schedule the base price, which is the sum of the average prices of the ten years, 1890 to 1899, divided by 10. The relative price or index number was then obtained for the schedule for each year in the period covered by dividing the average price of the article shown on that schedule for each year by the average price of the same article for the ten-year period 1890 to 1899. The quotient thus obtained multiplied by 100 is the per cent which the average price that year was of the base price, and is called the index number or relative price.

In the compilations of prices published in Bulletins Nos. 59, 65, and 71 and in the present compilation schedules were secured from a number of firms that had not before furnished prices, and in many cases such firms had been in existence but a few years. It was therefore necessary to follow a different method in determining the relative prices or index numbers for 1904 and succeeding years than had been used for the years 1890 to 1903. The method adopted for determining the 1904 relative price was to compute for each schedule or statement of prices the average price for 1903 and the average

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price for 1904, and then the per cent which the average price in 1904 was of the average price in 1903. These percentages for all of the various grades and descriptions of the article were added and the sum divided by the number of schedules secured for that article. Thus for evaporated apples the 33 schedules secured in the North Atlantic division showed that the average price in 1904 was 98.48 per cent of the average price in 1903; the 18 schedules secured in the South Atlantic division showed that the average price in 1904 was 98.14 per cent of the average price in 1903; the 33 schedules from the North Central division, 97.93 per cent; the 17 schedules from the South Central division, 98.47 per cent; the 17 schedules from the Western division, 99.32 per cent, and the total schedules, 118, showed that the average price in 1904 was 98.39 per cent of the average price in 1903. By referring to Table III (page 323) it is seen that the relative price or index number (average price for 1890 to 1899 = 100.0) for evaporated apples in the North Atlantic division in 1903 was 107.5; therefore in 1904 the relative price was 98.48 per cent of 107.5, or 105.9. The relative price for each of the geographical divisions and also for the United States was found by the same method. The relative prices for other articles were determined in the same way. After collecting prices for 1904 and 1905 a year later the relative price for 1905 was determined in the same way as was the relative price for 1904, as has just been explained.

In Bulletin No. 71 a new table (Table II) was added, showing relative prices for each of the months of 1905 and 1906, and in the present report Table II is extended to include the relative prices for each month of 1907. A great amount of work would have been required to compute the relative prices for each month according to the method followed for the years 1904 and 1905; therefore a shorter method which produces practically the same results was used. The method followed has been explained under Table II.

In order that the same general method might be followed in both Table II and Table III the figures for 1906 and 1907 (Table III) were computed in the following manner:

The average yearly prices for each year on all schedules obtained for an article were added and the sum divided by the number of schedules. Having the average price of the article for each of the two years according to the schedules and the relative price as determined in the preceding investigation, the relative price was found by proportion. For example, the average price for the year of evaporated apples in the United States, as computed from the price schedules obtained, was 12.24 cents in 1906 and 13.19 cents in 1907. The relative price in 1906 as determined in the preceding investigation was 115.6. From the proportion $12.24 : 13.19 :: 115.6 : x$ it is

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found that the relative price (x) of evaporated apples in the United States in 1907 was 124.6.

For reasons explained in the discussion of Table I the relative prices for bread are computed from the price per pound and not from the price per loaf.

The 39 States from which prices were secured have been grouped. The relative prices for each of the 30 articles are shown for each of the five geographical divisions, and for the United States. The classification into groups of the States represented is as follows:

North Atlantic division:
- Connecticut.
- Maine.
- Massachusetts.
- New Hampshire.
- New Jersey.
- New York.
- Pennsylvania.
- Rhode Island.

South Atlantic division:
- Delaware.
- District of Columbia.
- Florida.
- Georgia.
- Maryland.
- South Carolina.
- Virginia.
- West Virginia.

North Central division:
- Illinois.
- Indiana.
- Iowa.
- Kansas.

North Central division—Concluded.
- Michigan.
- Minnesota.
- Missouri.
- Nebraska.
- Ohio.
- South Dakota.
- Wisconsin.

South Central division:
- Alabama.
- Arkansas.
- Kentucky.
- Louisiana.
- Tennessee.
- Texas.

Western division:
- California.
- Colorado.
- Montana.
- Oregon.
- Utah.
- Washington.

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907.

APPLES, EVAPORATED, PER POUND.

State and locality.	Description.	Average price.	
		1906.	1907.
ALABAMA.			
Birmingham	Evaporated	$0.1250	$0.1417
	Evaporated	.1250	.1396
Montgomery	Evaporated	.1200	.1313
	Evaporated	.1000	.1042
ARKANSAS.			
Little Rock	Evaporated	.1250	.1375
	Evaporated	.1250	.1363
CALIFORNIA.			
Los Angeles	Evaporated	.1229	.1175
	Evaporated	.1292	.1042
San Francisco	Evaporated	.1000	.1146
	Evaporated	.1000	.1333
	Evaporated	.1000	.1250
	Evaporated	.1000	.1146
COLORADO.			
Denver	Evaporated	.1250	.1250
	Evaporated	.1200	.1200
CONNECTICUT.			
New Haven	Evaporated	.1200	.1275
	Evaporated	.1308	.1325
DELAWARE.			
Wilmington	Evaporated	.1100	.1158
	Evaporated	.1200	.1233
DISTRICT OF COLUMBIA.			
Washington	Evaporated	.1050	.1200
	Evaporated	.1250	.1313
	Evaporated	.1200	.1233
	Evaporated	.1267	.1300
FLORIDA.			
Jacksonville	Evaporated	.1250	.1250
	Evaporated	.1333	.1342
	Evaporated	.1375	.1375
GEORGIA.			
Atlanta	Evaporated	.1000	.1208
	Evaporated	.1000	.1083
	Evaporated	.1250	.1354
ILLINOIS.			
Chicago	Evaporated	.1000	.1000
	Evaporated	.1200	.1233
	Evaporated	.1300	.1367
Peoria	Evaporated	.1250	.1357
	Evaporated	.1500	.1500
INDIANA.			
Indianapolis	Evaporated	.1000	.1042
	Evaporated	.1000	.1250
Terre Haute	Evaporated	.1500	.1500
	Evaporated	.1500	.1500
IOWA.			
Des Moines	Evaporated	.1292	.1500
	Evaporated	.1000	.1083
Dubuque	Evaporated	.1000	.1104
	Evaporated	.1542	.1271
KANSAS.			
Topeka	Evaporated	.1196	.1292
	Evaporated	.1188	.1354
KENTUCKY.			
Louisville	Evaporated	.1500	.1500
	Evaporated	.1167	.1250
LOUISIANA.			
New Orleans	Evaporated	.1000	.1000
	Evaporated	.1171	.1446
	Evaporated	.1396	.1500
MAINE.			
Portland	Evaporated	.1400	.1500
	Evaporated	.1500	.1500
MARYLAND.			
Baltimore	Evaporated	.0800	.0800
	Evaporated	.1200	.1333
	Evaporated	.1000	.1200

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

APPLES, EVAPORATED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MASSACHUSETTS.			
Boston	Evaporated	$0.1220	$0.1450
	Evaporated	.1210	.1220
	Evaporated	.1418	.1500
Fall River	Evaporated	.1367	.1358
	Evaporated	.1450	.1433
Lynn	Evaporated	.1450	.1408
	Evaporated	.1246	.1300
Malden	Evaporated	.1250	.1411
	Evaporated	.1220	.1400
Worcester	Evaporated	.1517	.1533
	Evaporated	.1117	.1183
MICHIGAN.			
Detroit	Evaporated	.1083	.1050
	Evaporated	.1250	.1250
Grand Rapids	Evaporated	.1000	.1250
	Evaporated	.1000	.1125
MINNESOTA.			
Duluth	Evaporated	.1238	.1354
	Evaporated	.1208	.1250
Minneapolis	Evaporated	.1458	.1500
	Evaporated	.1200	.1333
St. Paul	Evaporated	.0967	.1000
	Evaporated	.1250	.1250
MISSOURI.			
Kansas City	Evaporated	.1250	.1250
	Evaporated	.0833	.1000
St. Louis	Evaporated	.1229	.1396
	Evaporated	.1229	.1375
	Evaporated	.1000	.1000
MONTANA.			
Butte	Evaporated	.1292	.1500
	Evaporated	.1500	.2000
NEBRASKA.			
Omaha	Evaporated	.1250	.1458
	Evaporated	.1250	.1313
NEW HAMPSHIRE.			
Manchester	Evaporated	.1308	.1383
	Evaporated	.1625	.1567
NEW JERSEY.			
Jersey City	Evaporated	.1267	.1400
	Evaporated	.1350	.1500
Trenton	Evaporated	.1200	.1200
	Evaporated	.1400	.1400
	Evaporated	.1200	.1200
NEW YORK.			
Albany	Evaporated	.1367	.1417
	Evaporated	.1300	.1300
Buffalo	Evaporated	.1057	.1671
	Evaporated	.1000	.1163
New York (Brooklyn)	Evaporated	.1500	.1500
	Evaporated	.1500	.1500
	Evaporated	.1450	.1500
New York (Manhattan)	Evaporated	.1200	.1200
	Evaporated	.1275	.1500
	Evaporated	.1275	.1500
	Evaporated	.1275	.1500
	Evaporated	.1500	.1500
Rochester	Evaporated	.1444	.1189
	Evaporated	.1400	.1500
Syracuse	Evaporated	.1100	.1100
	Evaporated	.1200	.1300
OHIO.			
Cincinnati	Evaporated	.1156	.1500
	Evaporated	.1500	.1500
	Evaporated	.1200	.1500
Cleveland	Evaporated	.1000	.1200
	Evaporated	.1400	.1400
	Evaporated	.1100	.1400
Toledo	Evaporated	.1400	.1400
	Evaporated	.1250	.1400
OREGON.			
Portland	Evaporated	.0930	.1146
	Evaporated	.1083	.1250

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

APPLES, EVAPORATED, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
PENNSYLVANIA.			
Philadelphia	Evaporated	$0.1200	$0.1388
	Evaporated	.1200	.1400
	Evaporated	.1125	.1238
Pittsburg (Allegheny)	Evaporated	.1292	.1500
	Evaporated	.1300	.1300
Pittsburg (Pittsburg)	Evaporated	.1300	.1300
	Evaporated	.1300	.1300
Scranton	Evaporated	.1200	.1017
	Evaporated	.1250	.1367
Wilkes-Barre	Evaporated	.1250	.1425
	Evaporated	.1267	.1361
RHODE ISLAND.			
Providence	Evaporated	.1508	.1467
	Evaporated	.1500	.1500
	Evaporated	.1408	.1575
SOUTH CAROLINA.			
Charleston	Evaporated	.1000	.1222
	Evaporated	.1000	.1089
SOUTH DAKOTA.			
Sioux Falls	Evaporated	.1000	.1188
	Evaporated	.1146	.1438
TENNESSEE.			
Memphis	Evaporated	.1100	.1333
	Evaporated	.1042	.1417
Nashville	Evaporated	.1000	.1286
	Evaporated	.0833	.1167
TEXAS.			
Dallas	Evaporated	.1250	.1375
	Evaporated	.1250	.1417
San Antonio	Evaporated	.1167	.1375
	Evaporated	.1000	.1271
UTAH.			
Salt Lake City	Evaporated	.2000	.2000
	Evaporated	.1875	.1750
VIRGINIA.			
Norfolk	Evaporated	.1000	.1080
	Evaporated	.1000	.1000
Richmond	Evaporated	.1000	.1071
	Evaporated	.1200	.1200
WASHINGTON.			
Seattle	Evaporated	.1250	.1250
	Evaporated	.1250	.1250
Tacoma	Evaporated	.1000	.1250
	Evaporated	.1250	.1250
WEST VIRGINIA.			
Wheeling	Evaporated	.1000	.1175
	Evaporated	.1500	.1500
WISCONSIN.			
Milwaukee	Evaporated	.1000	.1067
	Evaporated	.1000	.1200

BEANS, DRY, PER QUART.

ALABAMA.			
Birmingham	Navy	$0.1250	$0.1396
	Navy	.1250	.1250
Montgomery	Navy	.1000	.1000
	Navy	.1000	.1000
ARKANSAS.			
Little Rock	Navy, sold by the pound	.1172	.1186
	Navy, sold by the pound	.1172	.1563
CALIFORNIA.			
Los Angeles	Navy, sold by the pound	.0750	.0750
	Navy, sold in 6-pound lots	.0781	.0781
San Francisco	Navy, sold by the pound	.0750	.0750
	Navy, sold in 6-pound lots	.0781	.0781
	Pea, sold by the pound	.0938	.0938
	Pea sold in 4-pound lots	.1172	.1172

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEANS, DRY, PER QUART—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
COLORADO.			
Denver	Navy, sold by the pound	$0.0938	$0.0938
	Navy, sold by the pound	.0938	.0938
CONNECTICUT.			
New Haven	Pea	.1000	.1000
	Pea	.1000	.1000
DELAWARE.			
Wilmington	Navy	.0800	.0850
	Pea	.0800	.0833
DISTRICT OF COLUMBIA.			
Washington	Navy	.1000	.1000
	Pea	.1000	.1000
	Pea	.1000	.1033
	Pea	.1000	.1000
FLORIDA.			
Jacksonville	Navy	.1000	.1000
	Navy	.1000	.1183
	Navy	.1000	.1042
GEORGIA.			
Atlanta	Navy	.1000	.1000
	Navy	.1250	.1250
	Navy	.1000	.1000
ILLINOIS.			
Chicago	Navy	.1000	.1000
	Navy	.1000	.1000
	Navy	.0800	.0817
Peoria	Navy, sold by the pound	.0938	.0938
	Navy, sold by the pound	.0781	.0833
INDIANA.			
Indianapolis	Navy	.1000	.1000
	Navy, sold in 25 cent lots	.0833	.0833
Terre Haute	Navy, sold by the pound	.0750	.0844
	Navy, sold in 7-pound lots	.0670	.0688
IOWA.			
Des Moines	Navy, sold by the pound	.0938	.0977
	Navy, sold by the pound	.0750	.0750
Dubuque	Navy, sold by the pound	.0938	.0938
	Navy, sold by the pound	.0750	.0781
KANSAS.			
Topeka	Navy, sold by the pound	.0938	.0891
	Navy, sold by the pound	.0938	.0801
KENTUCKY.			
Louisville	Navy, sold by the pound	.0750	.0813
	Navy, sold by the pound	.0719	.0797
LOUISIANA.			
New Orleans	Navy, sold by the pound	.0938	.0938
	Navy, sold by the pound	.0938	.0938
	Navy, sold by the pound	.0938	.1406
MAINE.			
Portland	Pea	.0800	.0800
	Pea	.0767	.0850
MARYLAND.			
Baltimore	Navy	.0800	.0817
	Navy	.1000	.1000
	Navy	.1000	.1000
MASSACHUSETTS.			
Boston	Navy or pea	.0800	.0900
	Navy or pea, sold by the ½-peck	.0635	.0700
	Pea	.1000	.1000
Fall River	Pea	.0800	.0800
	Pea	.0783	.0800
Lynn	Navy or pea	.0700	.0758
	Pea	.0800	.0825
Malden	Navy or pea	.0900	.1000
	Navy or pea, sold by the ½-peck	.0683	.0825
Worcester	Pea	.0900	.0900
	Pea	.0600	.0800
MICHIGAN.			
Detroit	Navy	.0708	.0767
	Navy, sold in 6-pound lots	.0781	.0846
Grand Rapids	Navy	.0775	.0867
	Navy	.0700	.0725

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEANS, DRY, PER QUART—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MINNESOTA.			
Duluth	Navy, sold by the pound	$0.0828	$0.0781
	Navy, sold by the pound	.0938	.0938
Minneapolis	Navy	.0833	.0833
	Navy	.1000	.1000
St. Paul	Navy, sold in 3-pound lots	.0833	.0833
	Pea	.1000	.1000
MISSOURI.			
Kansas City	Navy, sold by the pound	.0938	.0938
	Navy, sold by the pound	.0856	.0938
St. Louis	Hand picked, sold by the pound	.0922	.1000
	Navy, sold by the pound	.0907	.0938
	Navy, sold by the pound	.0750	.0750
MONTANA.			
Butte	Navy, sold by the pound	.0938	.1016
	Navy, sold by the pound	.0938	.0938
NEBRASKA.			
Omaha	Navy, sold by the pound	.0938	.1125
	Navy, sold by the pound	.0938	.0938
NEW HAMPSHIRE.			
Manchester	Navy	.0708	.0750
	Pea	.0733	.0700
NEW JERSEY.			
Jersey City	Pea	.1000	.1000
	Pea	.0858	.0900
Trenton	Navy	.1000	.1000
	Pea	.1000	.1000
	Pea	.0850	.0867
NEW YORK.			
Albany	Navy	.0783	.0725
	Navy	.1000	.1000
Buffalo	Navy	.0900	.0817
	Navy	.0800	.0900
New York (Brooklyn)	Navy	.1200	.1200
	Navy or pea	.0900	.0900
	Pea	.0900	.0900
New York (Manhattan)	Navy	.1000	.1000
	Navy	.1000	.1000
	Navy	.1000	.1000
	Navy	.1067	.1200
	Navy	.1000	.1000
	Pea	.0800	.0800
Rochester	Navy	.0733	.0733
	Navy	.1083	.1229
Syracuse	Navy	.1000	.1000
	Navy	.1200	.1200
OHIO.			
Cincinnati	Navy	.1000	.1000
	Navy	.1000	.1000
	Navy	.1000	.1000
Cleveland	Navy	.1000	.1000
	Navy	.1000	.1000
	Navy	.0800	.1000
Toledo	Navy	.0800	.1050
	Navy	.0800	.0800
OREGON.			
Portland	Navy, sold by the pound	.0938	.0938
	Navy, sold by the pound	.0938	.1063
PENNSYLVANIA.			
Philadelphia	Navy	.1000	.1000
	Navy, sold by the pound	.0938	.0938
	Pea, sold by the pound	.0938	.0938
Pittsburg (Allegheny)	Navy	.1000	.1000
	Navy	.1000	.1000
Pittsburg (Pittsburg)	Navy	.1000	.1000
	Navy	.1000	.1000
Scranton	Navy	.1000	.1000
	Navy	.1200	.1200
Wilkes-Barre	Navy	.1000	.1000
	Navy	.1000	.1000
RHODE ISLAND.			
Providence	Navy	.1000	.1000
	Navy	.1017	.1000
SOUTH CAROLINA.			
Charleston	Navy	.1000	.1000
	Navy	.1000	.1000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEANS, DRY, PER QUART—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
SOUTH DAKOTA.			
Sioux Falls	Navy, sold by the pound	$0.0938	$0.0938
	Navy, sold by the pound	.0938	.1000
TENNESSEE.			
Memphis	Navy	.1000	.1083
	Navy, sold by the pound	.0938	.0938
Nashville	Navy	.0750	.0850
	Navy, sold in 6-pound lots Jan., 1906, to Aug., 1907.	.0938	.0950
TEXAS.			
Dallas	Navy, sold by the pound	.1172	.1172
	Navy, sold by the pound	.1172	.1172
San Antonio	Navy, sold by the pound	.0938	.1094
	Navy, sold by the pound	.0938	.0938
UTAH.			
Salt Lake City	Navy, sold by the pound	.1172	.1172
	Navy, sold by the pound	.0938	.0958
VIRGINIA.			
Norfolk	Navy	.1000	.1000
	Navy	.1000	.1000
Richmond	Navy	.1000	.1000
	Navy	.0800	.0867
WASHINGTON.			
Seattle	Navy	.1000	.1000
	Navy	.1000	.1000
Tacoma	Navy, sold by the pound	.0938	.0938
	Navy, sold by the pound	.0938	.0938
WEST VIRGINIA.			
Wheeling	Navy	.0800	.0800
	Navy	.0800	.0850
WISCONSIN.			
Milwaukee	Navy, sold by the pound	.0563	.0633
	Navy, sold by the pound	.0750	.0750

BEEF, FRESH, ROASTS, PER POUND.

ALABAMA.			
Birmingham	Chuck	$0.1000	$0.1083
	Chuck	.1075	.1158
	Chuck	.1208	.1250
	Chuck	.1250	.1104
	Rib	.1900	.2104
	Rib	.1867	.1850
	Rib	.1725	.1629
Montgomery	Chuck	.1000	.1000
	Chuck	.0933	.1000
	Chuck	.0917	.1000
	Rib	.1250	.1250
	Rib	.1250	.1250
	Rib	.1250	.1313
ARKANSAS.			
Little Rock	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Rib	.1500	.1500
	Rib	.1250	.1250
	Rib	.1250	.1250
CALIFORNIA.			
Los Angeles	Chuck	.0800	.0800
	Chuck	.0900	.1000
	Chuck	.1000	.1000
	Rib	.1700	.1700
	Rib	.1800	.1800
	Rib	.1500	.1500
San Francisco	Chuck	.1000	.1000
	Chuck	.1250	.1250
	Chuck	.0800	.0800
	Chuck	.1000	.1000
	Rib	.1500	.1500
	Rib	.1933	.2000
	Rib	.1500	.1500
	Rib	.1800	.1800

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, ROASTS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
COLORADO.			
Denver	Chuck	$0.0700	$0.0825
	Chuck	.0900	.0900
	Chuck	.0800	.0800
	Rib	.1333	.1354
	Rib	.1575	.1625
	Rib	.2000	.2000
CONNECTICUT.			
New Haven	Chuck	.1200	.1300
	Chuck	.1317	.1433
	Chuck	.1400	.1400
	Rib	.1800	.1867
	Rib	.2083	.2150
	Rib	.2083	.2175
DELAWARE.			
Wilmington	Chuck	.1200	.1233
	Chuck	.1000	.1188
	Chuck	.0983	.1083
	Rib	.1800	.1800
	Rib	.1500	.1567
	Rib	.1350	.1300
DISTRICT OF COLUMBIA.			
Washington	Chuck	.1300	.1300
	Chuck	.1250	.1250
	Chuck	.1242	.1250
	Chuck	.1250	.1188
	Rib	.1725	.1725
	Rib	.1692	.1758
	Rib	.1750	.1717
	Rib	.1700	.1750
FLORIDA.			
Jacksonville	Chuck	.0883	.1079
	Chuck	.1250	.1250
	Chuck	.1250	.1250
	Rib	.1250	.1250
	Rib	.1867	.1933
	Rib	.1800	.1800
GEORGIA.			
Atlanta	Chuck	.1000	.1104
	Chuck	.1000	.1000
	Chuck	.1250	.1250
	Rib	.1500	.1604
	Rib	.1892	.1933
	Rib	.1750	.1750
ILLINOIS.			
Chicago	Chuck	.1175	.1250
	Chuck	.1033	.1125
	Chuck	.0600	.0792
	Chuck	.0858	.0958
	Chuck	.1079	.1250
	Rib	.1217	.1217
	Rib	.1429	.1642
	Rib	.0917	.1042
	Rib	.1150	.1158
	Rib	.1479	.1725
Peoria	Chuck	.1000	.1000
	Chuck	.0900	.0900
	Chuck	.0800	.0800
	Rib	.1167	.1133
	Rib	.1200	.1017
	Rib	.1250	.1250
INDIANA.			
Indianapolis	Chuck	.1300	.1300
	Chuck	.1150	.1200
	Chuck	.1167	.1125
	Rib	.1650	.1800
	Rib	.1250	.1250
	Rib	.1317	.1367
Terre Haute	Chuck	.1050	.1283
	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Rib	.1583	.1617
	Rib	.1342	.1300
	Rib	.1458	.1417

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, ROASTS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
IOWA.			
Des Moines	Chuck	$0.0889	$0.0944
	Chuck	.1063	.1000
	Chuck	.0833	.0800
	Rib	.1567	.1567
	Rib	.1933	.1817
	Rib	.1250	.1250
Dubuque	Chuck	.1208	.1250
	Chuck	.1083	.1250
	Chuck	.0975	.0975
	Rib	.1500	.1500
	Rib	.1250	.1354
	Rib	.1333	.1375
KANSAS.			
Topeka	Chuck	.0867	.0785
	Chuck	.1000	.1058
	Chuck	.1000	.1000
	Rib	.1167	.1104
	Rib	.1375	.1438
	Rib	.1500	.1500
KENTUCKY.			
Louisville	Chuck	.0958	.0983
	Chuck	.0800	.0800
	Chuck	.1000	.1000
	Rib	.1383	.1396
	Rib	.1450	.1458
	Rib	.1533	.1438
	Rib	.1350	.1250
	Rib	.1500	.1500
LOUISIANA.			
New Orleans	Chuck	.0850	.1000
	Chuck	.1000	.1000
	Chuck	.0867	.0900
	Chuck	.1000	.1000
	Rib	.1500	.1500
	Rib	.1500	.1500
	Rib	.1667	.1633
	Rib	.1550	.1800
MAINE.			
Portland	Chuck	.0867	.0900
	Chuck	.0833	.0900
	Chuck	.1000	.1225
	Rib	.1200	.1375
	Rib	.1483	.1450
	Rib	.1525	.1575
MARYLAND.			
Baltimore	Chuck	.1000	.1067
	Chuck	.1000	.1000
	Chuck	.1000	.0883
	Chuck	.1000	.1000
	Chuck	.1067	.1067
	Rib	.1750	.1700
	Rib	.1333	.1342
	Rib	.1650	.1667
	Rib	.1467	.1483
MASSACHUSETTS.			
Boston	Chuck	.1163	.1117
	Chuck	.0950	.1092
	Chuck	.1000	.1025
	Chuck	.1250	.1333
	Rib	.1500	.1425
	Rib	.1933	.2117
	Rib	.1833	.1958
	Rib	.1758	.1917
Fall River	Chuck	.0858	.0867
	Chuck	.1008	.1067
	Chuck	.1033	.1075
	Rib	.1800	.1817
	Rib	.1467	.1658
	Rib	.1533	.1650
Lynn	Chuck	.1000	.1000
	Chuck	.1200	.1358
	Chuck	.1288	.1200
	Rib	.1221	.1200
	Rib	.1800	.1867
	Rib	.1592	.1592

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, ROASTS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MASSACHUSETTS—concluded.			
Malden	Chuck	$0.1229	$0.1350
	Chuck	.1233	.1450
	Chuck	.1100	.1179
	Rib	.1667	.1758
	Rib	.1733	.1900
	Rib	.1250	.1325
Worcester	Chuck	.0992	.1017
	Chuck	.0958	.1033
	Chuck	.0700	.0849
	Rib	.1700	.1675
	Rib	.1733	.1767
	Rib	.1650	.1775
MICHIGAN.			
Detroit	Chuck	.0883	.0967
	Chuck	.0925	.1000
	Chuck	.0842	.0917
	Rib	.1375	.1417
	Rib	.1308	.1300
	Rib	.1404	.1404
Grand Rapids	Chuck	.1000	.1000
	Chuck	.0900	.0900
	Chuck	.0967	.0983
	Rib	.1400	.1567
	Rib	.1400	.1400
	Rib	.1288	.1263
MINNESOTA.			
Duluth	Chuck	.0933	.1050
	Chuck	.1083	.1083
	Chuck	.1250	.1250
	Rib	.1133	.1250
	Rib	.1375	.1500
	Rib	.1800	.1967
Minneapolis	Chuck	.0792	.1000
	Chuck	.1000	.1000
	Chuck	.0867	.0950
	Rib	.1500	.1500
	Rib	.1600	.1600
	Rib	.1375	.1438
St. Paul	Chuck	.1033	.1050
	Chuck	.1225	.1267
	Chuck	.0800	.0883
	Rib	.1458	.1500
	Rib	.1767	.1917
	Rib	.1146	.1167
MISSOURI.			
Kansas City	Chuck	.1000	.1000
	Chuck	.0833	.0983
	Chuck	.0900	.0867
	Rib	.1667	.1688
	Rib	.1438	.1438
	Rib	.1150	.1150
St. Louis	Chuck	.0733	.0794
	Chuck	.0958	.0950
	Chuck	.0750	.0808
	Chuck	.0808	.0867
	Rib	.1592	.1600
	Rib	.1333	.1313
	Rib	.1213	.1258
	Rib	.1600	.1589
MONTANA.			
Butte	Chuck	.0917	.0788
	Chuck	.0538	.0542
	Chuck	.0708	.0825
	Rib	.1250	.1375
	Rib	.1083	.1042
	Rib	.1375	.1417
NEBRASKA.			
Omaha	Chuck	.0800	.0867
	Chuck	.0800	.1000
	Chuck	.0800	.0800
	Rib	.1333	.1354
	Rib	.1250	.1333
	Rib	.1333	.1354

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, ROASTS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW HAMPSHIRE.			
Manchester	Chuck	$0.1150	$0.1167
	Chuck	.1000	.0950
	Chuck	.1083	.1258
	Rib	.1375	.1483
	Rib	.1133	.1250
	Rib	.2000	.2000
NEW JERSEY.			
Jersey City	Chuck	.1092	.1250
	Chuck	.1050	.1200
	Chuck	.1292	.1250
	Rib	.1650	.1583
	Rib	.1296	.1475
	Rib	.1850	.1950
Trenton	Chuck	.1300	.1533
	Chuck	.1250	.1450
	Chuck	.1200	.1304
	Rib	.1767	.1917
	Rib	.1667	.2125
	Rib	.1667	.1633
NEW YORK.			
Albany	Chuck	.1400	.1400
	Chuck	.1200	.1233
	Chuck	.1250	.1325
	Rib	.1867	.1917
	Rib	.1500	.1500
	Rib	.1600	.1683
Buffalo	Chuck	.0842	.0800
	Chuck	.1183	.1242
	Chuck	.0967	.1083
	Chuck	.1067	.0929
	Chuck	.0983	.1008
	Chuck	.1042	.1142
	Rib	.1300	.1350
	Rib	.1517	.1667
	Rib	.1321	.1333
	Rib	.1233	.1217
	Rib	.1775	.1750
New York (Brooklyn)	Chuck	.1200	.1450
	Chuck	.1000	.1133
	Chuck	.1200	.1400
	Chuck	.1046	.1175
	Chuck	.1300	.1300
	Rib	.1800	.1867
	Rib	.1717	.1850
	Rib	.1550	.1658
	Rib	.2000	.2000
New York (Manhattan)	Chuck	.1000	.1250
	Chuck	.1333	.1425
	Chuck	.1288	.1325
	Chuck	.1133	.1200
	Chuck	.1083	.1125
	Chuck	.1167	.1183
	Rib	.1400	.1400
	Rib	.1400	.1250
	Rib	.1950	.2050
	Rib	.1425	.1475
	Rib	.1338	.1442
	Rib	.1800	.1800
Rochester	Chuck	.0900	.0900
	Chuck	.1033	.1033
	Chuck	.1000	.0983
	Rib	.1375	.1400
	Rib	.1400	.1400
	Rib	.1400	.1367
Syracuse	Chuck	.1000	.1000
	Chuck	.1250	.1383
	Chuck	.1200	.1250
	Rib	.1250	.1400
	Rib	.2050	.2200
	Rib	.2000	.2000
OHIO.			
Cincinnati	Chuck	.0850	.0883
	Chuck	.0800	.0800
	Chuck	.1250	.1250
	Chuck	.0800	.0800

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, ROASTS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
OHIO—concluded.			
Cincinnati	Rib	$0.1392	$0.1396
	Rib	.1500	.1500
	Rib	.1500	.1500
	Rib	.1417	.1417
	Rib	.1367	.1379
Cleveland	Chuck	.0900	.0992
	Chuck	.1200	.1250
	Chuck	.1250	.1388
	Chuck	.1183	.1233
	Rib	.1400	.1583
	Rib	.1500	.1600
	Rib	.1800	.1800
	Rib	.1500	.1500
Toledo	Chuck	.1150	.1163
	Chuck	.0908	.0900
	Chuck	.1400	.1400
	Rib	.1275	.1313
	Rib	.1800	.1800
	Rib	.1800	.1800
OREGON.			
Portland	Chuck	.0900	.0900
	Chuck	.0900	.0800
	Chuck	.1000	.1000
	Rib	.1500	.1500
	Rib	.1500	.1500
	Rib	.1479	.1500
PENNSYLVANIA.			
Philadelphia	Chuck	.1200	.1200
	Chuck	.0967	.1067
	Chuck	.1200	.1200
	Chuck	.1200	.1200
	Chuck	.1167	.1250
	Rib	.1800	.1800
	Rib	.1167	.1300
	Rib	.1833	.2000
	Rib	.2000	.2000
	Rib	.1800	.1800
Pittsburg (Allegheny)	Chuck	.1300	.1300
	Chuck	.1300	.1300
	Chuck	.1250	.1250
	Rib	.1567	.1567
	Rib	.1533	.1550
	Rib	.1617	.1625
Pittsburg (Pittsburg)	Chuck	.1250	.1367
	Chuck	.1300	.1300
	Chuck	.1300	.1300
	Rib	.1800	.1800
	Rib	.1867	.1983
	Rib	.1600	.1600
Scranton	Chuck	.1050	.1083
	Chuck	.1300	.1400
	Chuck	.1250	.1250
	Rib	.1400	.1433
	Rib	.2150	.2150
	Rib	.1750	.1800
Wilkes-Barre	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Chuck	.1250	.1250
	Rib	.1600	.1575
	Rib	.1425	.1338
	Rib	.1417	.1450
RHODE ISLAND.			
Providence	Chuck	.1267	.1167
	Chuck	.0867	.0883
	Rib	.1800	.1700
	Rib	.1733	.1767
	Rib	.2117	.2117
SOUTH CAROLINA.			
Charleston	Chuck	.0800	.0800
	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Rib	.1500	.1567
	Rib	.1313	.1313
	Rib	.1458	.1483

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, ROASTS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
SOUTH DAKOTA.			
Sioux Falls	Chuck	$0.0650	$0.0758
	Chuck	.0833	.0889
	Chuck	.0800	.0850
	Rib	.1333	.1354
	Rib	.1250	.1292
	Rib	.1313	.1333
TENNESSEE.			
Memphis	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Rib	.1313	.1354
	Rib	.1288	.1354
	Rib	.1500	.1500
Nashville	Chuck	.0917	.0950
	Chuck	.0758	.0750
	Chuck	.0933	.0950
	Rib	.1438	.1438
	Rib	.1375	.1438
	Rib	.1313	.1417
TEXAS.			
Dallas	Chuck	.0900	.0867
	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Rib	.1083	.1104
	Rib	.1188	.1125
	Rib	.1188	.1250
San Antonio	Chuck	.1600	.1000
	Chuck	.0800	.0817
	Chuck	.0769	.0800
	Rib	.1208	.1500
	Rib	.1250	.1333
	Rib	.1063	.1083
UTAH.			
Salt Lake City	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Chuck	.1250	.1200
	Rib	.2000	.1750
	Rib	.1750	.1750
	Rib	.1500	.1600
VIRGINIA.			
Norfolk	Chuck	.1000	.1125
	Chuck	.1042	.1083
	Chuck	.1208	.1104
	Rib	.1500	.1589
	Rib	.1292	.1354
	Rib	.1458	.1354
Richmond	Chuck	.1250	.1250
	Chuck	.1000	.1000
	Chuck	.1000	.1000
	Rib	.1542	.1589
	Rib	.1667	.1667
	Rib	.1275	.1304
WASHINGTON.			
Seattle	Chuck	.1000	.1000
	Chuck	.0800	.0800
	Chuck	.0892	.0800
	Rib	.1500	.1500
	Rib	.1500	.1783
	Rib	.1396	.1375
Tacoma	Chuck	.0900	.0975
	Chuck	.1033	.0967
	Chuck	.1021	.1175
	Rib	.1500	.1500
	Rib	.1558	.1250
	Rib	.1500	.1583
WEST VIRGINIA.			
Wheeling	Chuck	.1250	.1250
	Chuck	.1250	.1250
	Chuck	.1204	.1283
	Rib	.1500	.1500
	Rib	.1500	.1525
	Rib	.1383	.1425

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TABLE 1.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, ROASTS, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
WISCONSIN.			
Milwaukee	Chuck	$0.1000	$0.1200
	Chuck	.0900	.0900
	Chuck	.1000	.1000
	Rib	.1400	.1500
	Rib	.1200	.1200
	Rib	.1250	.1200

BEEF, FRESH, STEAKS, PER POUND.

ALABAMA.			
Birmingham	Round	$0.1500	$0.1667
	Round	.1500	.1500
	Round	.1500	.1375
	Sirloin	.2000	.2000
	Sirloin	.1933	.2050
	Sirloin	.1750	.1625
Montgomery	Round	.1146	.1167
	Round	.1250	.1250
	Round	.1250	.1250
	Sirloin	.1500	.1500
	Sirloin	.1500	.1500
	Sirloin	.1500	.1500
ARKANSAS.			
Little Rock	Round	.1500	.1500
	Round	.1250	.1250
	Round	.1292	.1250
	Sirloin	.1750	.1750
	Sirloin	.1500	.1542
	Sirloin	.1813	.1750
CALIFORNIA.			
Los Angeles	Round	.1250	.1250
	Round	.1250	.1250
	Round	.1250	.1250
	Sirloin	.1700	.1700
	Sirloin	.1500	.1500
	Sirloin	.1600	.1600
San Francisco	Round	.1250	.1250
	Round	.1250	.1250
	Round	.1000	.1000
	Round	.1100	.1100
	Sirloin	.1250	.1500
	Sirloin	.1500	.1500
	Sirloin	.1250	.1250
	Sirloin	.1500	.1500
COLORADO.			
Denver	Round	.1083	.1333
	Round	.1104	.1354
	Round	.1500	.1500
	Sirloin	.1583	.1583
	Sirloin	.1354	.1354
	Sirloin	.2000	.2000
CONNECTICUT.			
New Haven	Round	.2000	.2100
	Round	.2083	.2150
	Round	.2200	.2283
	Sirloin	.2217	.2300
	Sirloin	.2425	.2725
	Sirloin	.2300	.2383
DELAWARE.			
Wilmington	Round	.2000	.2033
	Round	.1600	.1600
	Round	.1500	.1567
	Sirloin	.2150	.2200
	Sirloin	.2200	.2067
	Sirloin	.1600	.1600
DISTRICT OF COLUMBIA.			
Washington	Round	.1558	.1550
	Round	.1558	.1550
	Round	.1542	.1533
	Round	.1500	.1500
	Sirloin	.1883	.2033
	Sirloin	.1850	.2017
	Sirloin	.1883	.1950
	Sirloin	.1933	.1867

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, STEAKS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
FLORIDA.			
Jacksonville	Round	$0.1500	$0.1500
	Round	.1433	.1675
	Round	.1800	.1800
	Sirloin	.2000	.2000
	Sirloin	.2033	.2450
	Sirloin	.1800	.1800
GEORGIA.			
Atlanta	Round	.1354	.1458
	Round	.1396	.1417
	Round	.1250	.1250
	Sirloin	.1500	.1604
	Sirloin	.1750	.1767
	Sirloin	.2000	.2000
ILLINOIS.			
Chicago	Round	.1117	.1133
	Round	.1000	.1050
	Round	.1075	.1208
	Round	.1133	.1250
	Round	.1058	.1142
	Sirloin	.1383	.1383
	Sirloin	.1429	.1642
	Sirloin	.1425	.1525
	Sirloin	.1313	.1354
	Sirloin	.1458	.1650
Peoria	Round	.1383	.1338
	Round	.1408	.1250
	Round	.1317	.1254
	Round	.1288	.1242
	Sirloin	.1467	.1500
	Sirloin	.1542	.1500
	Sirloin	.1542	.1567
INDIANA.			
Indianapolis	Round	.1500	.1700
	Round	.1483	.1500
	Round	.1350	.1400
	Sirloin	.1800	.2000
	Sirloin	.1658	.1700
	Sirloin	.1675	.1775
Terre Haute	Round	.1396	.1467
	Round	.1300	.1300
	Round	.1475	.1500
	Sirloin	.1592	.1667
	Sirloin	.1500	.1725
	Sirloin	.1600	.1675
IOWA.			
Des Moines	Round	.1250	.1250
	Round	.1417	.1500
	Round	.1063	.1063
	Sirloin	.1600	.1713
	Sirloin	.1767	.1800
	Sirloin	.1333	.1417
Dubuque	Round	.1500	.1500
	Round	.1438	.1500
	Round	.1250	.1250
	Sirloin	.1958	.2000
	Sirloin	.1750	.2000
	Sirloin	.1500	.1500
KANSAS.			
Topeka	Round	.1313	.1354
	Round	.1396	.1458
	Round	.1250	.1333
	Sirloin	.1500	.1750
	Sirloin	.1683	.1750
	Sirloin	.1583	.1617
KENTUCKY.			
Louisville	Round	.1400	.1396
	Round	.1250	.1250
	Round	.1425	.1354
	Sirloin	.1675	.1675
	Sirloin	.1583	.1542
	Sirloin	.1688	.1425

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, STEAKS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
LOUISIANA.			
New Orleans	Round	$0.1125	$0.1063
	Round	.1167	.1250
	Round	.1083	.1250
	Round	.1250	.1375
	Sirloin	.1500	.1500
	Sirloin	.2000	.2000
	Sirloin	.1700	.1800
	Sirloin	.1800	.1800
MAINE.			
Portland	Round	.1250	.1350
	Round	.1250	.1417
	Round	.1379	.1629
	Sirloin	.2100	.2333
	Sirloin	.2017	.2200
	Sirloin	.2700	.2933
MARYLAND.			
Baltimore	Round	.1550	.1550
	Round	.1500	.1538
	Round	.1533	.1533
	Round	.1467	.1525
	Sirloin	.1817	.1792
	Sirloin	.1667	.1683
	Sirloin	.1650	.1692
	Sirloin	.1667	.1667
MASSACHUSETTS.			
Boston	Round	.2050	.2158
	Round	.1842	.1900
	Round	.1975	.2200
	Sirloin	.2525	.2792
	Sirloin	.2208	.2308
	Sirloin	.2400	.2525
	Sirloin	.2158	.2250
	Sirloin	.2367	.2475
Fall River	Round	.1467	.1550
	Round	.1250	.1308
	Round	.1383	.1542
	Sirloin	.2400	.2417
	Sirloin	.2458	.2600
	Sirloin	.2233	.2333
Lynn	Round	.1475	.1500
	Round	.2067	.2225
	Round	.1658	.1867
	Sirloin	.2300	.2358
	Sirloin	.2817	.2833
	Sirloin	.2675	.2500
Malden	Round	.1950	.2117
	Round	.1950	.2075
	Round	.1608	.1792
	Sirloin	.2575	.2900
	Sirloin	.2675	.2917
	Sirloin	.2150	.2342
Worcester	Round	.1883	.1900
	Round	.1883	.2150
	Round	.1550	.1667
	Sirloin	.2867	.3100
	Sirloin	.2800	.3033
	Sirloin	.2600	.2933
MICHIGAN.			
Detroit	Round	.1042	.1208
	Round	.1221	.1400
	Round	.1175	.1167
	Sirloin	.1500	.1533
	Sirloin	.1600	.1600
	Sirloin	.1442	.1458
Grand Rapids	Round	.1250	.1250
	Round	.1250	.1250
	Round	.1250	.1275
	Sirloin	.1600	.1600
	Sirloin	.1600	.1600
	Sirloin	.1450	.1467
MINNESOTA.			
Duluth	Round	.1363	.1471
	Round	.1396	.1500
	Round	.1500	.1675
	Sirloin	.1558	.1775
	Sirloin	.1658	.1700
	Sirloin	.1933	.2125

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, STEAKS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MINNESOTA—concluded.			
Minneapolis	Round	$0.1208	$0.1259
	Round	.1208	.1313
	Round	.1317	.1313
	Sirloin	.1500	.1633
	Sirloin	.1600	.1575
	Sirloin	.1575	.1625
St. Paul	Round	.1396	.1417
	Round	.1433	.1600
	Round	.1250	.1250
	Sirloin	.1700	.1750
	Sirloin	.1983	.2200
	Sirloin	.1500	.1500
MISSOURI.			
Kansas City	Round	.1250	.1250
	Round	.1313	.1250
	Round	.1250	.1250
	Sirloin	.1667	.1688
	Sirloin	.1604	.1625
	Sirloin	.1417	.1500
St. Louis	Round	.1229	.1288
	Round	.1200	.1183
	Round	.1354	.1333
	Round	.1263	.1300
	Sirloin	.1604	.1667
	Sirloin	.1492	.1617
	Sirloin	.1746	.1750
	Sirloin	.1650	.1625
MONTANA.			
Butte	Round	.1146	.1000
	Round	.0900	.0958
	Round	.1008	.1146
	Sirloin	.1500	.1500
	Sirloin	.1125	.1292
	Sirloin	.1375	.1667
NEBRASKA.			
Omaha	Round	.1125	.1146
	Round	.1146	.1288
	Round	.1125	.1188
	Sirloin	.1500	.1567
	Sirloin	.1500	.1650
	Sirloin	.1500	.1567
NEW HAMPSHIRE.			
Manchester	Round	.1683	.1783
	Round	.1525	.1708
	Round	.1900	.1883
	Sirloin	.3033	.3067
	Sirloin	.2200	.2408
	Sirloin	.2883	.3050
NEW JERSEY.			
Jersey City	Round	.1917	.2000
	Round	.1425	.1617
	Round	.1933	.2150
	Sirloin	.2142	.2133
	Sirloin	.1817	.1867
	Sirloin	.2117	.2350
Trenton	Round	.1667	.1667
	Round	.1617	.1933
	Round	.1600	.1667
	Sirloin	.2217	.2417
	Sirloin	.2108	.2500
	Sirloin	.2067	.2300
NEW YORK.			
Albany	Round	.1800	.1800
	Round	.1600	.1600
	Round	.1600	.1700
	Sirloin	.2200	.2200
	Sirloin	.2000	.2033
	Sirloin	.2200	.2317
Buffalo	Round	.1167	.1175
	Round	.1200	.1300
	Round	.1400	.1467
	Round	.1200	.1242
	Round	.1200	.1283
	Round	.1363	.1325

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, STEAKS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW YORK—concluded.			
Buffalo	Sirloin	$0.1383	$0.1483
	Sirloin	.1517	.1542
	Sirloin	.1750	.1683
	Sirloin	.1433	.1517
	Sirloin	.1500	.1592
	Sirloin	.1717	.1692
New York (Brooklyn)	Round	.1860	.1867
	Round	.1717	.1933
	Round	.1600	.1833
	Round	.1883	.1950
	Sirloin	.2000	.2075
	Sirloin	.1917	.2133
	Sirloin	.2060	.2100
	Sirloin	.2000	.2000
New York (Manhattan)	Round	.2000	.2050
	Round	.1933	.1983
	Round	.1800	.1867
	Round	.1633	.1692
	Round	.1600	.1600
	Round	.1800	.1917
	Sirloin	.2183	.2250
	Sirloin	.1700	.1683
	Sirloin	.1800	.1800
	Sirloin	.2167	.2267
	Sirloin	.1950	.1983
	Sirloin	.1600	.1600
	Sirloin	.2000	.2133
	Sirloin	.2000	.2133
Rochester	Round	.1100	.1200
	Round	.1367	.1300
	Round	.1200	.1200
	Sirloin	.1375	.1450
	Sirloin	.1550	.1533
	Sirloin	.1400	.1417
Syracuse	Round	.1200	.1367
	Round	.1525	.1583
	Round	.1400	.1500
	Sirloin	.1460	.1558
	Sirloin	.1850	.2133
	Sirloin	.1867	.2117
OHIO.			
Cincinnati	Round	.1125	.1167
	Round	.1167	.1200
	Round	.1250	.1250
	Round	.1250	.1250
	Sirloin	.1500	.1500
	Sirloin	.1417	.1417
	Sirloin	.1600	.1600
	Sirloin	.1500	.1500
Cleveland	Round	.1600	.1600
	Round	.1417	.1483
	Round	.1417	.1583
	Round	.1400	.1500
	Sirloin	.1600	.1600
	Sirloin	.1800	.1867
	Sirloin	.1800	.1983
	Sirloin	.1800	.1867
Toledo	Round	.1208	.1275
	Round	.1500	.1500
	Round	.1050	.1050
	Sirloin	.1425	.1475
	Sirloin	.2000	.2150
	Sirloin	.2000	.2000
OREGON.			
Portland	Round	.1250	.1250
	Round	.1250	.1000
	Round	.1250	.1250
	Sirloin	.1250	.1479
	Sirloin	.1500	.1250
	Sirloin	.1500	.1500
PENNSYLVANIA.			
Philadelphia	Round	.1792	.1850
	Round	.1917	.200
	Round	.1567	.1
	Round	.1592	
	Round	.1800	

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, STEAKS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
PENNSYLVANIA—concluded.			
Philadelphia	Sirloin	$0.2300	$0.2500
	Sirloin	.2300	.2300
	Sirloin	.1750	.1883
	Sirloin	.2500	.2500
	Sirloin	.2450	.2500
Pittsburg (Allegheny)	Round	.1600	.1542
	Round	.1667	.1683
	Round	.1667	.1667
	Sirloin	.2000	.1900
	Sirloin	.1867	.1917
	Sirloin	.1950	.1950
Pittsburg (Pittsburg)	Round	.1600	.1633
	Round	.1500	.1500
	Round	.1500	.1500
	Sirloin	.2000	.2033
	Sirloin	.2067	.2083
	Sirloin	.2000	.2050
Scranton	Round	.1250	.1300
	Round	.1600	.1600
	Round	.1600	.1600
	Sirloin	.1667	.1667
	Sirloin	.2450	.2425
	Sirloin	.2000	.2067
Wilkes-Barre	Round	.1400	.1400
	Round	.1250	.1313
	Round	.1400	.1400
	Sirloin	.2000	.2000
	Sirfbin	.1800	.1700
	Sirloin	.1883	.1967
RHODE ISLAND.			
Providence	Round	.2083	.2000
	Round	.1933	.2000
	Round	.2000	.2000
	Round	.2083	.2000
	Sirloin	.3200	.3117
	Sirloin	.3492	.3517
SOUTH CAROLINA.			
Charleston	Round	.1167	.1333
	Round	.1188	.1208
	Round	.1250	.1354
	Sirloin	.1392	.1646
	Sirloin	.1500	.1517
	Sirloin	.1396	.1550
SOUTH DAKOTA.			
Sioux Falls	Round	.1083	.1188
	Round	.1083	.1146
	Round	.1313	.1354
	Sirloin	.1500	.1583
	Sirloin	.1550	.1600
	Sirloin	.1550	.1567
TENNESSEE.			
Memphis	Round	.1250	.1250
	Round	.1288	.1333
	Round	.1500	.1500
	Sirloin	.1708	.1629
	Sirloin	.1713	.1750
	Sirloin	.1625	.1633
Nashville	Round	.1250	.1250
	Round	.1188	.1250
	Round	.1125	.1250
	Sirloin	.1396	.1438
	Sirloin	.1396	.1375
	Sirloin	.1354	.1417
TEXAS.			
Dallas	Round	.1250	.1313
	Round	.1000	.1000
	Round	.1000	.1000
	Sirloin	.1500	.1563
	Sirloin	.1396	.1438
	Sirloin	.1250	.1250
San Antonio	Round	.1250	.1250
	Round	.1000	.1229
	Round	.1000	.1000
	Sirloin	.1375	.1500
	Sirloin	.1500	.1500
	Sirloin	.1333	.1417

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, FRESH, STEAKS, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
UTAH.			
Salt Lake City	Round	$0.1500	$0.1500
	Round	.1250	.1250
	Round	.1333	.1500
	Sirloin	.1750	.1750
	Sirloin	.1750	.1750
	Sirloin	.1750	.1750
VIRGINIA.			
Norfolk	Round	.1250	.1333
	Round	.1250	.1404
	Round	.1354	.1375
	Sirloin	.1500	.1678
	Sirloin	.1500	.1667
	Sirloin	.1800	.1883
Richmond	Round	.1354	.1333
	Round	.1250	.1250
	Round	.1250	.1288
	Sirloin	.1556	.1556
	Sirloin	.1665	.1667
	Sirloin	.1525	.1533
WASHINGTON.			
Seattle	Round	.1250	.1250
	Round	.1250	.1250
	Round	.1146	.1250
	Sirloin	.1500	.1500
	Sirloin	.1500	.1500
	Sirloin	.1717	.1354
Tacoma	Round	.1250	.1250
	Round	.1238	.1125
	Round	.1250	.1396
	Sirloin	.1500	.1500
	Sirloin	.1583	.1467
	Sirloin	.1800	.1800
WEST VIRGINIA.			
Wheeling	Round	.1500	.1500
	Round	.1500	.1525
	Round	.1433	.1433
	Sirloin	.1867	.1883
	Sirloin	.1800	.1883
	Sirloin	.1650	.1675
WISCONSIN.			
Milwaukee	Round	.1250	.1325
	Round	.1200	.1200
	Round	.1267	.1246
	Sirloin	.1600	.1600
	Sirloin	.1400	.1400
	Sirloin	.1450	.1400

BEEF, SALT, CORNED, PER POUND.

ALABAMA.			
Birmingham	Brisket	$0.1250	$0.1250
	Plate	.1250	.1250
Montgomery	Brisket	.1000	.1000
	Brisket	.1000	.1000
CALIFORNIA.			
Los Angeles	Plate	.0800	.0800
	Plate	.1000	.1000
San Francisco	Brisket	.0800	.0800
	Plate	.0600	.0600
	Plate	.0800	.0800
	Plate	.0600	.0600
COLORADO.			
Denver	Brisket	.0500	.0500
	Brisket	.0600	.0700
	Rump	.0800	.1000
CONNECTICUT.			
New Haven	Neck or flank	.1000	.1000
	Plate	.0517	.0733
DELAWARE.			
Wilmington	Chuck	.1200	.1200
	Rump	.1375	.1417

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, SALT, CORNED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
DISTRICT OF COLUMBIA.			
Washington	Plate	$0.0800	$0.0800
	Plate	.0800	.0800
	Plate	.1000	.1000
	Plate	.1000	.1000
FLORIDA.			
Jacksonville	Plate	.0800	.1000
	Plate or brisket	.1000	.1000
	Plate or brisket	.1000	.1000
GEORGIA.			
Atlanta	Chuck	.1250	.1250
ILLINOIS.			
Chicago	Blade or brisket	.0675	.0600
	Brisket or rump	.0600	.0725
	Rump	.0850	.1042
	Rump, boneless	.0800	.0800
Peoria	Corned	.0900	.0900
	Corned	.1000	.1000
INDIANA.			
Indianapolis	Plate	.0700	.0700
	Rump	.1000	.1000
Terre Haute	Rump or shoulder	.1171	.1000
	Rump or shoulder	.1000	.1000
IOWA.			
Des Moines	Rump or rib	.1417	.1500
	Shoulder	.0833	.0833
Dubuque	Plate	.0867	.0800
	Shoulder	.1133	.1117
KANSAS.			
Topeka	Plate	.0944	.1000
	Plate, boneless, rolled	.0833	.0800
KENTUCKY.			
Louisville	Brisket	.0600	.0700
	Brisket	.0800	.0750
LOUISIANA.			
New Orleans	Brisket	.0800	.0933
	Plate	.1000	.1000
	Plate	.1250	.1250
MAINE.			
Portland	Brisket	.1200	.1242
	Thin rib	.0717	.1083
MARYLAND.			
Baltimore	Plate	.0800	.0800
	Plate	.0700	.0700
	Shoulder	.0917	.0925
MASSACHUSETTS.			
Boston	Brisket	.1317	.1333
	Sticking pieces	.0733	.0758
	Sticking pieces	.0800	.0867
Fall River	Flank	.0709	.0817
	Thick rib	.1000	.1000
Lynn	Thick ends	.1009	.1000
	Thick ends	.1200	.1358
Malden	Thick ends	.1250	.1350
	Thick ends	.1100	.1133
Worcester	Thick ends	.1250	.1375
	Thin rib	.0900	.0983
MICHIGAN.			
Detroit	Plate	.0600	.0600
	Plate, boneless, rolled	.0858	.0950
Grand Rapids	Rump	.1125	.1125
	Rump	.1250	.1250
	Rump	.1250	.1288
MINNESOTA.			
Duluth	Shoulder	.1000	.1000
	Shoulder	.1000	.1000
	Shoulder	.1000	.1000
'neapolis	Chuck	.1000	.1000
	Rump, boneless	.0933	.1000
'aul	Rump	.1150	.1200
	Shoulder	.0850	.0967

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, SALT, CORNED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MISSOURI.			
Kansas City	Plate	$0.0600	$0.0600
	Plate	.0600	.0600
St. Louis	Brisket	.0650	.0700
	Flank	.0700	.0700
	Rump	.0833	.0822
MONTANA.			
Butte	Plate or neck	.0700	.0700
	Rolled	.0889	.0800
NEBRASKA.			
Omaha	Plate	.0600	.0650
	Plate	.0600	.0642
NEW HAMPSHIRE.			
Manchester	Thin rib	.0800	.0750
	Thin rib	.0842	.0883
NEW JERSEY.			
Jersey City	Brisket or plate	.0800	.0800
	Plate	.0867	.0808
Trenton	Brisket or flank	.0850	.0800
	Brisket or plate	.0983	.0858
NEW YORK.			
Albany	Rump	.1400	.1400
	Shoulder	.1200	.1200
Buffalo	Chuck	.0825	.0800
	Rump	.0967	.1100
New York (Brooklyn)	Plate	.0800	.1000
	Plate	.1000	.1000
	Rump	.1200	.1400
New York (Manhattan)	Brisket	.0800	.0800
	Plate	.0800	.0850
	Plate	.0717	.0783
	Round	.1021	.1250
Rochester	Brisket	.0592	.0567
	Rump	.0717	.0800
Syracuse	Plate	.0600	.0700
	Rump	.0800	.0800
OHIO.			
Cincinnati	Brisket	.0800	.0800
	Rump or shoulder	.0800	.0800
	Rump or shoulder	.1250	.1250
Cleveland	Brisket, boneless	.1000	.1075
	Rump	.1250	.1300
	Navel	.0700	.0700
Toledo	Rib	.0500	.0508
	Shoulder	.0792	.0800
OREGON.			
Portland	Brisket	.0700	.0700
	Plate	.0700	.0700
PENNSYLVANIA.			
Philadelphia	Brisket, boneless	.0817	.0900
	Plate or brisket	.0800	.0800
	Rump	.0983	.1067
	Rump	.1200	.1200
Pittsburg (Allegheny)	Rump	.1300	.1300
	Rump	.1000	.1050
Pittsburg (Pittsburg)	Rump	.1300	.1300
	Rump	.1300	.1300
Scranton	Chuck	.1000	.1000
	Chuck or neck	.1000	.1000
Wilkes-Barre	Plate	.1000	.1000
	Rump	.1250	.1250
RHODE ISLAND.			
Providence	Plate	.1150	.1200
	Plate	.1200	.1350
SOUTH CAROLINA.			
Charleston	Round	.1000	.1000
	Round	.1000	.1000
SOUTH DAKOTA.			
Sioux Falls	Shoulder	.0833	.0930
	Shoulder	.0800	.0800

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BEEF, SALT, CORNED, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
TENNESSEE.			
Memphis	Plate	$0.1250	$0.1250
	Rump or brisket	.0855	.1000
	Rump or brisket	.1000	.1000
Nashville	Brisket	.0800	.0800
	Rump	.1000	.1000
TEXAS.			
Dallas	Plate	.1250	.1250
	Shoulder	.1250	.1000
San Antonio	Brisket	.1000	.1000
	Corned	.1313	.1500
UTAH.			
Salt Lake City	Brisket, boneless	.1250	.1250
	Brisket, boneless	.1250	.1250
	Brisket, boneless	.1250	.1250
VIRGINIA.			
Norfolk	Navel	.0800	.0800
	Navel	.0800	.0800
Richmond	Brisket	.0800	.0800
	Brisket	.0800	.0800
WASHINGTON.			
Seattle	Plate	.0800	.0800
	Plate	.0600	.0700
	Plate	.0567	.0600
Tacoma	Brisket	.0767	.0700
	Brisket or plate	.0800	.0800
WEST VIRGINIA.			
Wheeling	Brisket	.1000	.1100
	Plate	.1000	.1000
WISCONSIN.			
Milwaukee	Flank	.0700	.0700
	Rump	.0900	.0900

BREAD, WHEAT.

State and locality.	Description.	Average price per loaf.		Average price per pound.	
		1906.	1907.	1906.	1907.
ALABAMA.					
Birmingham	12-ounce loaf	$0.0500	$0.0500	$0.0667	$0.0667
	12-ounce loaf	.0500	.0500	.0667	.0667
	1-pound loaf	.0500	.0500	.0500	.0500
Montgomery	13½-ounce loaf, sold by ticket	.0313	.0313	.0370	.0370
	14-ounce loaf, sold by ticket	.0313	.0313	.0357	.0357
	1-pound loaf, sold by ticket	.0357	.0357	.0357	.0357
ARKANSAS.					
Little Rock	13-ounce loaf, sold by ticket	.0357	.0357	.0440	.0440
	14-ounce loaf, 6 loaves sold for 25 cents	.0417	.0417	.0476	.0476
	14-ounce loaf, sold by ticket	.0357	.0357	.0408	.0408
CALIFORNIA.					
Los Angeles	1-pound loaf, Jan., 1906, to Aug., 1907; 14-ounce loaf, Sept. to Dec., 1907.	.0500	.0500	.0500	.0524
	1-pound loaf, Jan., 1906, to Aug., 1907; 14-ounce loaf, Sept. to Dec., 1907.	.0500	.0500	.0500	.0524
	20-ounce loaf	.0500	.0500	.0400	.0400
San Francisco	14½-ounce loaf	.0500	.0500	.0552	.0552
	14½-ounce loaf	.0500	.0500	.0552	.0552
	1-pound loaf, 1906; 14½-ounce loaf, 1907.	.0500	.0500	.0500	.0552
	1-pound loaf, 1906; 14½-ounce loaf, 1907.	.0500	.0500	.0500	.0552
	18-ounce loaf, Jan. to Apr., 1906; 1-pound loaf, May to Dec., 1906; 14½-ounce loaf, 1907.	.0500	.0500	.0481	.0552
COLORADO.					
Denver	14-ounce loaf, sold 3 for 10 cents	.0333	.0333	.0381	.0381
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BREAD, WHEAT—Continued.

State and locality.	Description.	Average price per loaf.		Average price per pound.	
		1906.	1907.	1906.	1907.
CONNECTICUT.					
New Haven	14½-ounce loaf, 1906; 15-ounce loaf, 1907.	$0.0500	$0.0500	$0.0552	$0.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
DELAWARE.					
Wilmington	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf, 1906; 14½-ounce loaf, 1907.	.0500	.0500	.0500	.0552
	1-pound loaf, 1906; 15½-ounce loaf, 1907.	.0500	.0500	.0500	.0516
DISTRICT OF COLUMBIA.					
Washington	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
FLORIDA.					
Jacksonville	14-ounce loaf, 6 loaves sold for 25 cents.	.0417	.0417	.0476	.0476
	14-ounce loaf, 1906; 13-ounce loaf, 1907.	.0400	.0400	.0457	.0492
	14-ounce loaf, 1906; 13-ounce loaf, 1907.	.0400	.0400	.0457	.0492
	14-ounce loaf, Jan., 1906, to June, 1907; 13-ounce loaf, July to Dec., 1907; sold in 25-cent lots.	.0417	.0458	.0476	.0546
GEORGIA.					
Atlanta	15-ounce loaf, Jan., 1906, to Aug., 1907; 13-ounce loaf, Sept. to Dec., 1907.	.0500	.0500	.0533	.0560
	15 ounce loaf, Jan., 1906, to Aug., 1907; 13-ounce loaf, Sept. to Dec., 1907.	.0500	.0500	.0533	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
ILLINOIS.					
Chicago	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	12-ounce loaf	.0500	.0500	.0615	.0615
	13-ounce loaf, Jan., 1906; 1-pound loaf, Feb., 1906, to Dec., 1907.	.0500	.0500	.0510	.0500
Peoria	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
INDIANA.					
Indianapolis	17-ounce loaf, 1906; 1-pound loaf, 1907.	.0500	.0500	.0471	.0500
	17-ounce loaf, 1906; 1-pound loaf, 1907.	.0500	.0500	.0471	.0500
	17-ounce loaf, 1906; 1-pound loaf, 1907.	.0500	.0500	.0471	.0500
Terre Haute	17-ounce loaf	.0500	.0500	.0471	.0471
	17-ounce loaf	.0500	.0500	.0471	.0471
	19-ounce loaf, 1906; 18-ounce loaf, 1907.	.0500	.0500	.0421	.0444
IOWA.					
Des Moines	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
Dubuque	1-pound loaf	.0500	.0500	.0500	.0500
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf, Jan., 1906, to June, 1907; 14-ounce loaf, July to Dec., 1907.	.0500	.0500	.0533	.0552
KANSAS.					
Topeka	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
KENTUCKY.					
Louisville	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf, Jan., 1906, to Mar., 1907; 14-ounce loaf, Apr. to Dec., 1907.	.0500	.0500	.0500	.0553
	1-pound loaf, Jan., 1906, to July, 1907; 15-ounce loaf, Aug. and Sept., 1907; 14½-ounce loaf, Oct. to Dec., 1907.	.0500	.0500	.0500	.0519

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BREAD, WHEAT—Continued.

State and locality.	Description.	Average price per loaf.		Average price per pound	
		1906.	1907.	1906.	1907.
LOUISIANA.					
New Orleans	18-ounce loaf	$0.0500	$0.0500	$0.0444	$0.0444
	18-ounce loaf	.0500	.0500	.0444	.0444
	18-ounce loaf	.0500	.0500	.0444	.0444
	18-ounce loaf	.0500	.0500	.0444	.0444
MAINE.					
Portland	1-pound loaf, 1906; 14-ounce loaf, 1907	.0500	.0500	.0500	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
	15-ounce loaf, 1906; 14-ounce loaf, 1907	.0500	.0500	.0533	.0571
MARYLAND.					
Baltimore	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
MASSACHUSETTS.					
Boston	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
Fall River	14-ounce loaf	.0500	.0500	.0571	.0571
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf, 1906; 14-ounce loaf, 1907	.0500	.0500	.0533	.0571
Lynn	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	24-ounce loaf	.0500	.0500	.0333	.0333
Malden	1-pound loaf	.0500	.0500	.0500	.0500
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
Worcester	1-pound loaf, 1906; 14½-ounce loaf, 1907	.0500	.0500	.0500	.0552
	14½-ounce loaf, Jan., 1906; 14-ounce loaf, Feb., 1906, to Dec., 1907.	.0500	.0500	.0569	.0571
	14½-ounce loaf	.0500	.0500	.0552	.0552
MICHIGAN.					
Detroit	1-pound loaf	.0500	.0525	.0500	.0525
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
Grand Rapids	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf, 1906; 14-ounce loaf, 1907	.0500	.0500	.0500	.0571
MINNESOTA.					
Duluth	14-ounce loaf	.0500	.0500	.0571	.0571
	1-pound loaf	.0500	.0500	.0500	.0500
	20-ounce loaf	.0500	.0500	.0400	.0400
Minneapolis	1-pound loaf, Jan., 1906, to Sept., 1907; 14-ounce loaf, Oct. to Dec., 1907.	.0500	.0500	.0500	.0518
	1-pound loaf, Jan., 1906, to Oct., 1907; 14-ounce loaf, Nov. and Dec., 1907.	.0500	.0500	.0500	.0512
	1-pound loaf, Jan., 1906, to Oct., 1907; 14-ounce loaf, Nov. and Dec., 1907.	.0500	.0500	.0500	.0512
St. Paul	14-ounce loaf	.0500	.0500	.0571	.0571
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
MISSOURI.					
Kansas City	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
St. Louis	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	17-ounce loaf	.0500	.0500	.0471	.0471
MONTANA.					
Butte	1-pound loaf	.0500	.0708	.0500	.0708
	12½-ounce loaf, 1906; 13-ounce loaf, 1907	.0500	.0667	.0640	.0820
	12½-ounce loaf, Jan., 1906, to Apr., 1907; 14-ounce loaf, May to Dec., 1907.	.0500	.0667	.0640	.0785
NEBRASKA.					
Omaha	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500

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TABLE 1.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BREAD, WHEAT—Continued.

State and locality.	Description.	Average price per loaf.		Average price per pound.	
		1906.	1907.	1906.	1907.
NEW HAMPSHIRE.					
Manchester	1-pound loaf, 1906; 14-ounce loaf, 1907	$0.0500	$0.0500	$0.0500	$0.0571
	1-pound loaf, 1906; 15-ounce loaf, 1907	.0500	.0500	.0500	.0533
	1-pound loaf, Jan., 1906, to Nov., 1907; 15-ounce loaf, Dec., 1907.	.0500	.0500	.0500	.0503
NEW JERSEY.					
Jersey City	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf, Jan., 1906, to Mar., 1907; 14-ounce loaf, Apr. to Dec., 1907.	.0500	.0500	.0500	.0553
Trenton	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
NEW YORK.					
Albany	1-pound loaf	.0500	.0500	.0500	.0500
	17-ounce loaf, Jan., 1906, to Sept., 1907; 1-pound loaf, Oct. to Dec., 1907.	.0500	.0500	.0471	.0478
	17-ounce loaf, Jan., 1906, to Aug., 1907; 16½-ounce loaf, Sept. to Dec., 1907.	.0500	.0500	.0471	.0476
Buffalo	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	15-ounce loaf	.0500	.0500	.0533	.0533
New York (Brooklyn)	1-pound loaf	.0500	.0500	.0500	.0500
	14-ounce loaf	.0500	.0500	.0571	.0571
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
New York (Manhattan).	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
Rochester	1-pound loaf	.0500	.0500	.0500	.0500
	16½-ounce loaf	.0500	.0500	.0485	.0485
	15-ounce loaf, 1906; 15½-ounce loaf, 1907	.0408	.0458	.0436	.0473
Syracuse	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
OHIO.					
Cincinnati	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
Cleveland	1-pound loaf, 1906; 14-ounce loaf, 1907	.0500	.0500	.0500	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
	17-ounce loaf, 1906; 1-pound loaf, 1907	.0500	.0500	.0471	.0500
Toledo	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf, Jan., 1906, to Sept., 1907; 15-ounce loaf, Oct. to Dec., 1907.	.0500	.0500	.0500	.0508
OREGON.					
Portland	1-pound loaf, Jan., 1906, to June, 1907; 14-ounce loaf, July to Dec., 1907.	.0500	.0500	.0500	.0536
	1-pound loaf, Jan., 1906, to Sept., 1907; 14½-ounce loaf, Oct. to Dec., 1907.	.0500	.0500	.0500	.0513
	15½-ounce loaf, Jan., 1906, to Sept., 1907; 15-ounce loaf, Oct. to Dec., 1907.	.0500	.0500	.0516	.0520
PENNSYLVANIA.					
Philadelphia	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	14-ounce loaf	.0500	.0500	.0571	.0571
Pittsburg (Allegheny)	1-pound loaf, 1906; 13-ounce loaf, 1907	.0500	.0500	.0500	.0615
	1-pound loaf, 1906; 14-ounce loaf, 1907	.0500	.0500	.0500	.0571
	1-pound loaf, 1906; 14-ounce loaf, 1907	.0500	.0500	.0500	.0571

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BREAD, WHEAT—Concluded.

State and locality.	Description.	Average price per loaf.		Average price per pound.	
		1906.	1907.	1906.	1907.
PENNSYLVANIA—con.					
Pittsburg(Pittsburg).	1-pound loaf, 1906; 14-ounce loaf, 1907.	$0.0500	$0.0500	$0.0500	$0.0571
	1-pound loaf, 1906; 14-ounce loaf, 1907.	.0500	.0500	.0500	.0571
	1-pound loaf, 1906; 15-ounce loaf, 1907.	.0500	.0500	.0500	.0533
Scranton	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf, 1906; 15-ounce loaf, 1907.	.0500	.0500	.0500	.0533
	15-ounce loaf	.0500	.0500	.0533	.0533
Wilkes-Barre	14-ounce loaf	.0500	.0525	.0571	.0600
	14-ounce loaf	.0500	.0500	.0571	.0571
	14½-ounce loaf	.0500	.0500	.0552	.0552
RHODE ISLAND.					
Providence	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
SOUTH CAROLINA.					
Charleston	1-pound loaf	.0500	.0500	.0500	.0500
	10½-ounce loaf	.0300	.0300	.0457	.0457
	12-ounce loaf	.0400	.0400	.0533	.0533
SOUTH DAKOTA.					
Sioux Falls	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
TENNESSEE.					
Memphis	13-ounce loaf, 1906; 14-ounce loaf, 1907.	.0500	.0500	.0615	.0571
	13-ounce loaf, 1906; 14½-ounce loaf, 1907.	.0500	.0500	.0615	.0552
	14½-ounce loaf	.0500	.0500	.0552	.0552
Nashville	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf, Jan., 1906, to Sept., 1907; 14-ounce loaf, Oct. to Dec., 1907.	.0500	.0500	.0500	.0518
TEXAS.					
Dallas	13½-ounce loaf, 1906; 14-ounce loaf, 1907.	.0500	.0500	.0593	.0571
	13½-ounce loaf, 1906; 14-ounce loaf, 1907.	.0500	.0500	.0593	.0571
	14-ounce loaf, 1906; 13-ounce loaf, 1907.	.0500	.0500	.0571	.0615
San Antonio	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
UTAH.					
Salt Lake City	14-ounce loaf	.0500	.0500	.0571	.0571
	14-ounce loaf	.0500	.0500	.0571	.0571
	15-ounce loaf	.0500	.0500	.0533	.0533
VIRGINIA.					
Norfolk	1-pound loaf	.0500	.0500	.0500	.0500
	15½-ounce loaf	.0500	.0500	.0516	.0516
	15½-ounce loaf	.0500	.0500	.0516	.0516
Richmond	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
WASHINGTON.					
Seattle	14½-ounce loaf	.0500	.0500	.0552	.0552
	14½-ounce loaf, Jan., 1906, to Mar., 1907; 15-ounce loaf, Apr. to Dec., 1907.	.0500	.0500	.0552	.0538
	15-ounce loaf, Jan., 1906, to Sept., 1907; 1-pound loaf, Oct. to Dec., 1907.	.0500	.0500	.0533	.0525
Tacoma	14-ounce loaf	.0500	.0500	.0571	.0571
	14½-ounce loaf	.0500	.0500	.0552	.0552
	14½-ounce loaf	.0500	.0500	.0552	.0552
WEST VIRGINIA.					
Wheeling	1-pound loaf, 1906; 13-ounce loaf, 1907.	.0500	.0500	.0500	.0615
	1-pound loaf, 1906; 14-ounce loaf, 1907.	.0500	.0500	.0500	.0571
	1-pound loaf, 1906; 15-ounce loaf, 1907.	.0500	.0500	.0500	.0533
WISCONSIN.					
Milwaukee	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500
	1-pound loaf	.0500	.0500	.0500	.0500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BUTTER, PER POUND.

State and locality.	Description.	Average price.	
		1906.	1907.
ALABAMA.			
Birmingham	Creamery	$0.3708	$0.3792
	Creamery	.3000	.3333
Montgomery	Creamery	.3250	.3750
	Creamery	.3250	.3417
	Creamery	.3333	.3417
ARKANSAS.			
Little Rock	Creamery	.3333	.3625
	Creamery	.3333	.3625
	Creamery	.3417	.3533
CALIFORNIA.			
Los Angeles	Creamery	.3042	.3833
	Creamery, sold in 2-pound rolls	.3500	.3854
	Dairy	.3375	.3604
San Francisco	Creamery, cold storage during winter months.	.2875	.3000
	Creamery, cold storage during winter months.	.2938	.3771
	Creamery, sold in 1½-pound squares, cold storage during winter months.	.2889	.3361
	Creamery, sold in 1½-pound squares	.3667	.4139
	Creamery, sold in 2-pound squares, cold storage during winter months.	.3458	.3792
COLORADO.			
Denver	Creamery	.2675	.3042
	Creamery	.2817	.3167
	Creamery	.2517	.2988
CONNECTICUT.			
New Haven	Creamery	.3533	.3483
	Creamery	.3667	.4117
	Creamery	.3033	.3200
DELAWARE.			
Wilmington	Creamery	.3900	.4233
	Creamery	.3392	.3467
	Creamery	.3475	.3833
DISTRICT OF COLUMBIA.			
Washington	Creamery	.3250	.3300
	Creamery	.3325	.3658
	Creamery	.3250	.3375
	Creamery	.3300	.3425
FLORIDA.			
Jacksonville	Creamery	.3500	.3550
	Creamery	.3200	.3833
	Creamery	.3000	.3500
GEORGIA.			
Atlanta	Creamery	.3375	.3833
	Creamery	.3000	.3417
	Creamery	.3444	.3750
ILLINOIS.			
Chicago	Creamery	.2733	.2833
	Dairy	.2250	.2508
	Dairy	.2742	.2817
	Dairy	.2600	.2892
	Dairy	.2475	.2700
Peoria	Creamery	.2983	.3142
	Creamery	.2850	.3208
	Creamery	.2775	.3108
INDIANA.			
Indianapolis	Creamery	.3250	.3333
	Creamery	.3117	.3533
	Creamery	.3142	.3300
Terre Haute	Creamery	.3050	.3117
	Creamery	.3142	.3533
	Creamery	.3275	.3317
IOWA.			
Des Moines	Creamery	.2858	.3217
	Creamery	.2842	.3308
	Creamery	.2617	.2958
Dubuque	Creamery	.2608	.2883
	Creamery	.3042	.3167
	Dairy	.2483	.2558

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BUTTER, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
KANSAS.			
Topeka	Creamery	$0.2725	$0.3167
	Creamery	.2775	.3158
	Creamery	.2968	.2960
KENTUCKY.			
Louisville	Creamery	.3242	.3292
	Creamery	.3500	.3542
	Creamery	.3258	.3692
LOUISIANA.			
New Orleans	Creamery	.3042	.3208
	Creamery	.3058	.3258
	Creamery	.3150	.3483
	Creamery	.3150	.3392
MAINE.			
Portland	Creamery	.3225	.3660
	Creamery	.2825	.3683
	Creamery	.3158	.3600
MARYLAND.			
Baltimore	Creamery	.3267	.3450
	Creamery	.3342	.3508
	Creamery	.3150	.3492
	Creamery	.3175	.3492
MASSACHUSETTS.			
Boston	Creamery	.3158	.3150
	Creamery	.2525	.2667
	Creamery	.3033	.2933
	Dairy	.2742	.2833
Fall River	Creamery	.2742	.2817
	Creamery	.2683	.2750
	Creamery	.2875	.2942
Lynn	Creamery	.2725	.3183
	Creamery	.3150	.3533
	Creamery	.2942	.3400
Malden	Creamery	.2667	.2675
	Creamery	.2775	.2750
	Creamery	.3008	.3000
Worcester	Creamery	.3000	.2933
	Creamery	.2858	.2900
	Creamery	.2925	.3100
MICHIGAN.			
Detroit	Creamery	.2825	.3167
	Creamery	.3100	.3475
	Creamery	.3183	.3375
Grand Rapids	Dairy	.2575	.3000
	Dairy	.2533	.3042
	Dairy	.2258	.2475
MINNESOTA.			
Duluth	Creamery	.2867	.2792
	Creamery	.2875	.3317
	Creamery	.2975	.3275
Minneapolis	Creamery	.2808	.3167
	Creamery	.2983	.3308
	Creamery	.2925	.3225
St. Paul	Creamery	.2833	.3250
	Creamery	.2950	.3233
	Creamery	.2867	.3092
MISSOURI.			
Kansas City	Creamery	.2900	.3083
	Creamery	.3183	.3100
	Creamery	.2725	.2867
St. Louis	Creamery	.2746	.2667
	Creamery	.3075	.3367
	Creamery	.3192	.3117
	Creamery	.2892	.2942
	Creamery	.3025	.2942
MONTANA.			
Butte	Creamery	.3250	.3667
	Creamery	.3396	.3729
	Creamery	.3333	.3792
NEBRASKA.			
Omaha	Creamery	.2642	.2808
	Creamery	.2642	.2960
	Creamery	.2558	.2617

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BUTTER, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW HAMPSHIRE.			
Manchester	Creamery	$0.3133	$0.3092
	Creamery	.3042	.3333
	Creamery	.3233	.3258
	Dairy	.2792	.2833
NEW JERSEY.			
Jersey City	Creamery	.2958	.3367
	Creamery	.3000	.3475
	Creamery	.3400	.3208
Trenton	Creamery	.3188	.3250
	Creamery	.3667	.4025
	Creamery	.3033	.3675
	Dairy	.3142	.3525
NEW YORK.			
Albany	Creamery	.2608	.2908
	Creamery	.3092	.2983
	Creamery	.2842	.3292
Buffalo	Creamery	.3133	.2942
	Creamery	.2917	.3150
	Creamery	.3075	.3467
	Creamery	.2892	.3042
	Creamery	.2958	.3333
New York (Brooklyn)	Creamery	.2908	.2908
	Creamery	.2992	.3142
	Creamery	.3133	.3292
	Creamery	.2858	.3325
	Creamery	.3200	.2908
New York (Manhattan)	Creamery	.2858	.2967
	Creamery	.3025	.3417
	Creamery	.3050	.3000
	Creamery	.3000	.3017
	Creamery	.2858	.3025
	Dairy	.3150	.3533
	Dairy	.2933	.3050
Rochester	Creamery	.2808	.3283
	Creamery	.2783	.3317
	Creamery	.2708	.3083
Syracuse	Creamery	.2817	.3292
	Creamery	.2908	.3408
	Creamery	.3017	.3133
OHIO.			
Cincinnati	Creamery	.3158	.3242
	Creamery	.3283	.3517
	Creamery	.3275	.3525
	Creamery	.3233	.3267
Cleveland	Creamery	.2883	.3275
	Creamery	.3075	.3567
	Creamery	.3008	.3300
	Creamery	.2942	.3367
Toledo	Creamery	.3250	.3408
	Creamery	.2775	.3017
	Creamery	.2452	.2757
OREGON.			
Portland	Creamery	.3208	.3667
	Creamery	.3271	.3500
	Creamery	.3063	.3708
PENNSYLVANIA.			
Philadelphia	Creamery	.3367	.3433
	Creamery	.3642	.3592
	Creamery	.3242	.3600
	Creamery	.3417	.3717
	Creamery	.3400	.3717
	Dairy	.2683	.3042
Pittsburg (Allegheny)	Creamery	.3200	.3375
	Creamery	.3192	.3633
	Creamery	.3217	.3317
Pittsburg (Pittsburg)	Creamery	.3408	.3350
	Creamery	.3308	.3367
	Creamery	.3325	.3292
Scranton	Creamery	.3192	.3208
	Creamery	.3250	.3333
	Creamery	.3192	.3142
Wilkes-Barre	Creamery	.2583	.2900
	Creamery	.3158	.3167
	Creamery	.3550	.3867

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

BUTTER, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
RHODE ISLAND.			
Providence	Creamery	$0.3283	$0.3258
	Creamery	.3050	.3250
	Creamery	.3200	.3275
SOUTH CAROLINA.			
Charleston	Creamery	.2908	.3225
	Creamery	.2942	.3208
	Creamery	.2867	.3342
SOUTH DAKOTA.			
Sioux Falls	Creamery	.2600	.2642
	Creamery	.2550	.2867
	Creamery	.2600	.2725
TENNESSEE.			
Memphis	Creamery	.3042	.3458
	Creamery	.3158	.3542
	Creamery	.3292	.3667
Nashville	Creamery	.3050	.3275
	Dairy	.2750	.2750
	Dairy	.3000	.3125
TEXAS.			
Dallas	Creamery	.3292	.3333
	Creamery	.3042	.3292
	Creamery	.2875	.3042
San Antonio	Creamery	.2833	.3167
	Creamery	.2875	.3250
	Creamery	.3083	.3667
UTAH.			
Salt Lake City	Creamery	.2917	.3333
	Creamery	.3042	.3458
VIRGINIA.			
Norfolk	Creamery	.3133	.3458
	Creamery	.2975	.3133
	Creamery	.3158	.3333
Richmond	Creamery	.3267	.3500
	Creamery	.2958	.3308
	Creamery	.3117	.3425
WASHINGTON.			
Seattle	Creamery	.3271	.3417
	Creamery	.3313	.3313
	Creamery	.3042	.3333
Tacoma	Creamery	.2792	.3375
	Creamery	.3363	.3729
	Creamery	.3467	.3896
WEST VIRGINIA.			
Wheeling	Creamery	.3233	.3500
	Creamery	.3067	.3292
	Dairy	.2975	.3167
WISCONSIN.			
Milwaukee	Creamery	.2483	.2917
	Creamery	.2717	.3067
	Creamery	.2850	.2825

CHEESE, FULL CREAM, PER POUND.

ALABAMA.			
Birmingham	Full cream	$0.2000	$0.2125
	Full cream	.2000	.2208
Montgomery	Full cream	.1917	.2083
	Full cream	.2000	.2000
ARKANSAS.			
Little Rock	Full cream	.2000	.2083
	Full cream	.2000	.2133
CALIFORNIA.			
Los Angeles	Full cream	.2000	.2000
	Full cream	.2000	.2125
San Francisco	Full cream	.2000	.2000
	Full cream	.2000	.2000
	Full cream	.2000	.2200
	Full cream	.1800	.2125
	Full cream	.1750	.2000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CHEESE, FULL CREAM, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
COLORADO.			
Denver	Full cream	$0.2000	$0.2167
	Full cream	.1688	.2000
CONNECTICUT.			
New Haven	Full cream	.1867	.2033
	Full cream	.1800	.2000
DELAWARE.			
Wilmington	Full cream	.1783	.1833
	Full cream	.2000	.2000
DISTRICT OF COLUMBIA.			
Washington	Full cream	.1850	.2000
	Full cream	.2000	.2117
	Full cream	.2000	.2067
	Full cream	.2000	.2000
FLORIDA.			
Jacksonville	Full cream	.2000	.2125
	Full cream	.2167	.2500
	Full cream	.2000	.2000
GEORGIA.			
Atlanta	Full cream	.2000	.2092
	Full cream	.1813	.2000
	Full cream	.1750	.1875
ILLINOIS.			
Chicago	Full cream	.1833	.1933
	Full cream	.1742	.1850
	Full cream	.1975	.2000
	Full cream	.1800	.1800
	Full cream	.1833	.1858
Peoria	Full cream	.2000	.2000
	Full cream	.2000	.2000
INDIANA.			
Indianapolis	Full cream	.1917	.2000
	Full cream	.2000	.2125
	Full cream	.1675	.2000
Terre Haute	Full cream	.2033	.2067
	Full cream	.2000	.2000
IOWA.			
Des Moines	Full cream	.1933	.2292
	Full cream	.1917	.2000
Dubuque	Full cream	.1642	.1675
	Full cream	.1688	.1792
KANSAS.			
Topeka	Full cream	.2000	.2000
	Full cream	.2083	.2467
KENTUCKY.			
Louisville	Full cream	.2000	.2000
	Full cream	.2033	.2408
LOUISIANA.			
New Orleans	Full cream	.1813	.1938
	Full cream	.2083	.2167
	Full cream	.2000	.2125
MAINE.			
Portland	Full cream	.1783	.2067
	Full cream	.1800	.2000
MARYLAND.			
Baltimore	Full cream	.1950	.2050
	Full cream	.1717	.1850
	Full cream	.1850	.2067
MASSACHUSETTS.			
Boston	Full cream	.1617	.1750
	Full cream	.1700	.1742
	Full cream	.1667	.1833
Fall River	Full cream	.1550	.1725
	Full cream	.1650	.1950
Lynn	Full cream	.1742	.1833
	Full cream	.1933	.2000
Malden	Full cream	.1800	.1775
	Full cream	.1950	.1967
Worcester	Full cream	.1700	.1917
	Full cream	.1750	.1950

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CHEESE, FULL CREAM, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MICHIGAN.			
Detroit	Full cream	$0.1658	$0.1775
	Full cream	.1775	.2033
Grand Rapids	Full cream	.1650	.1750
	Full cream	.1942	.2000
	Full cream	.1625	.1625
MINNESOTA.			
Duluth	Full cream	.1742	.2000
	Full cream	.1625	.1683
Minneapolis	Full cream	.1800	.1800
	Full cream	.2000	.2000
St. Paul	Full cream	.1438	.1817
	Full cream	.1917	.1950
MISSOURI.			
Kansas City	Full cream	.1833	.2000
	Full cream	.1575	.1800
St. Louis	Full cream	.1738	.1800
	Full cream	.1800	.2000
	Full cream	.2000	.2000
	Full cream	.1817	.2000
MONTANA			
Butte	Full cream	.2500	.2500
	Full cream	.2000	.2000
NEBRASKA.			
Omaha	Full cream	.2000	.2000
	Full cream	.2000	.2000
NEW HAMPSHIRE.			
Manchester	Full cream	.1667	.1933
	Full cream	.1767	.1850
NEW JERSEY.			
Jersey City	Full cream	.1867	.2050
	Full cream	.1717	.1867
Trenton	Full cream	.1800	.1917
	Full cream	.1833	.1933
NEW YORK.			
Albany	Full cream	.1575	.1700
	Full cream	.1667	.1733
Buffalo	Full cream	.1625	.1733
	Full cream	.1642	.1808
	Full cream	.1608	.1817
	Full cream	.1667	.1808
New York (Brooklyn)	Full cream	.2000	.2017
	Full cream	.1667	.1867
	Full cream	.1700	.1700
New York (Manhattan)	Full cream	.1700	.1800
	Full cream	.1883	.1950
	Full cream	.1692	.1792
	Full cream	.1717	.1825
	Full cream	.2000	.2183
	Full cream	.1800	.1867
Rochester	Full cream	.1750	.1742
	Full cream	.1733	.2000
	Full cream	.1733	.1800
Syracuse	Full cream	.1800	.1850
	Full cream	.1717	.1800
OHIO.			
Cincinnati	Full cream	.2083	.2500
	Full cream	.2000	.2167
	Full cream	.2000	.2458
Cleveland	Full cream	.1608	.1800
	Full cream	.2200	.2200
	Full cream	.1808	.1933
	Full cream	.1683	.1817
Toledo	Full cream	.2083	.2200
	Full cream	.1600	.1542
OREGON.			
Portland	Full cream	.1750	.2208
	Full cream	.2000	.2125
PENNSYLVANIA.			
Philadelphia	Full cream	.1617	.1900
	Full cream	.1800	.2133
	Full cream	.1800	.2000
	Full cream	.1558	.1733
	Full cream	.1775	.1867
	Full cream	.1900	.1983

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CHEESE, FULL CREAM, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
PENNSYLVANIA—concluded.			
Pittsburg (Allegheny)	Full cream	$0.1850	$0.2083
	Full cream	.1592	.1767
Pittsburg (Pittsburg)	Full cream	.2000	.2000
	Full cream	.1725	.1900
Scranton	Full cream	.1800	.1900
	Full cream	.1800	.1850
Wilkes-Barre	Full cream	.1758	.1858
	Full cream	.1600	.1733
RHODE ISLAND.			
Providence	Full cream	.1800	.1958
	Full cream	.1642	.1717
	Full cream	.1733	.1767
SOUTH CAROLINA.			
Charleston	Full cream	.1800	.2000
	Full cream	.1675	.1850
SOUTH DAKOTA.			
Sioux Falls	Full cream	.1833	.2000
	Full cream	.1800	.2000
TENNESSEE.			
Memphis	Full cream	.2000	.2083
	Full cream	.2000	.2125
	Full cream	.2000	.2000
Nashville	Full cream	.2417	.2333
	Full cream	.1800	.2025
TEXAS.			
Dallas	Full cream	.2000	.2000
	Full cream	.2000	.2167
San Antonio	Full cream	.2000	.2167
	Full cream	.2000	.2292
UTAH.			
Salt Lake City	Full cream	.2000	.2000
	Full cream	.2000	.2375
VIRGINIA.			
Norfolk	Full cream	.1800	.1917
	Full cream	.1800	.1867
Richmond	Full cream	.1975	.2000
	Full cream	.1800	.1850
	Full cream	.1758	.1883
WASHINGTON.			
Seattle	Full cream	.2000	.2000
	Full cream	.2000	.2000
Tacoma	Full cream	.1521	.1688
	Full cream	.2000	.2000
WEST VIRGINIA.			
Wheeling	Full cream	.1750	.1950
	Full cream	.1867	.2000
WISCONSIN.			
Milwaukee	Full cream	.1525	.1625
	Full cream	.1600	.1358
	Full cream	.1508	.1658

CHICKENS (YEAR OR MORE OLD), DRESSED, PER POUND.

ALABAMA.			
Birmingham	Drawn	$0.1917	$0.2000
	Not drawn	.1900	.1933
Montgomery	Not drawn	.1700	.1700
	Not drawn	.1725	.1700
ARKANSAS.			
Little Rock	Not drawn	.1450	.1525
	Not drawn	.1617	.1667
CALIFORNIA.			
Los Angeles	Not drawn	.2500	.2500
	Not drawn	.2400	.2500
San Francisco	Not drawn	.2000	.2017
	Not drawn	.2000	.2117
	Not drawn	.2000	.1992

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CHICKENS (YEAR OR MORE OLD), DRESSED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
COLORADO.			
Denver	Not drawn	$0.1571	$0.1571
	Not drawn	.1625	.1625
	Not drawn	.1542	.1358
CONNECTICUT.			
New Haven	Not drawn	.1783	.1817
	Not drawn	.1850	.1833
DELAWARE.			
Wilmington	Not drawn	.1633	.1567
	Not drawn	.1683	.1783
	Not drawn	.1717	.1942
DISTRICT OF COLUMBIA.			
Washington	Not drawn	.1767	.1708
	Not drawn	.1692	.1692
	Not drawn	.1775	.1733
	Not drawn	.1758	.1800
FLORIDA.			
Jacksonville	Not drawn	.2000	.2000
	Not drawn	.1725	.1783
	Not drawn	.2000	.2000
GEORGIA.			
Atlanta	Not drawn	.1650	.1683
	Not drawn	.1717	.1892
	Not drawn	.1900	.1967
ILLINOIS.			
Chicago	Not drawn	.1533	.1558
	Not drawn	.1475	.1500
	Not drawn	.1425	.1433
Peoria	Drawn	.1483	.1517
	Drawn	.1567	.1479
	Drawn	.1517	.1642
INDIANA.			
Indianapolis	Drawn	.1933	.1900
	Drawn	.1775	.1896
	Drawn	.1867	.1875
Terre Haute	Drawn	.1867	.1700
	Drawn	.1608	.1617
IOWA.			
Des Moines	Not drawn	.1513	.1500
	Not drawn	.1425	.1354
Dubuque	Drawn	.1500	.1500
	Drawn	.1563	.1500
KANSAS.			
Topeka	Not drawn	.1333	.1313
	Not drawn	.1292	.1675
KENTUCKY.			
Louisville	Drawn	.1513	.1496
	Not drawn	.1750	.1900
LOUISIANA.			
New Orleans	Not drawn	1658	.1758
	Not drawn	.1850	.1900
	Not drawn	.1700	.1963
MAINE.			
Portland	Drawn	.1833	.1917
	Drawn	.2217	.2417
MARYLAND.			
Baltimore	Not drawn	.1650	.1692
	Not drawn	.1617	.1625
	Not drawn	.1817	.1917
MASSACHUSETTS.			
Boston	Not drawn	.1817	.1883
	Not drawn	.1617	.1758
	Not drawn	.1833	.1900
Fall River	Not drawn	.2142	.2233
	Not drawn	.2000	.2067
Lynn	Not drawn	.1700	.1700
	Not drawn	.2025	.2100
Malden	Not drawn	.2192	.2158
	Not drawn	.1783	.1867
Worcester	Not drawn	.1892	.1933
	Not drawn	.2317	.2317

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CHICKENS (YEAR OR MORE OLD), DRESSED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MICHIGAN.			
Detroit	Not drawn	$0.1492	$0.1433
	Not drawn	.1617	.1338
Grand Rapids	Not drawn	.1650	.1525
	Not drawn	.1483	.1537
	Not drawn	.1683	.1488
	Not drawn	.1667	.1692
MINNESOTA.			
Duluth	Not drawn	.1625	.1650
	Not drawn	.1604	.1608
Minneapolis	Not drawn	.1333	.1350
	Not drawn	.1358	.1500
St. Paul	Not drawn	.1500	.1475
	Not drawn	.1508	.1450
MISSOURI.			
Kansas City	Not drawn	.1429	.1458
	Not drawn	.1454	.1450
St. Louis	Not drawn	.1467	.1413
	Not drawn	.1392	.1458
	Not drawn	.1458	.1475
MONTANA.			
Butte	Not drawn	.1675	.1683
	Not drawn	.1633	.1688
NEBRASKA.			
Omaha	Not drawn	.1250	.1213
	Not drawn	.1258	.1292
NEW HAMPSHIRE.			
Manchester	Drawn	.2158	.2375
	Drawn	.2200	.2200
NEW JERSEY.			
Jersey City	Not drawn	.1700	.1700
	Not drawn	.1575	.1479
Trenton	Not drawn	.2083	.1967
	Not drawn	.1883	.1717
NEW YORK.			
Albany	Not drawn	.1500	.1375
	Not drawn	.1600	.1600
Buffalo	Not drawn	.1392	.1450
	Not drawn	.1458	.1483
	Not drawn	.1600	.1700
	Not drawn	.1600	.1600
New York (Brooklyn)	Not drawn	.1850	.1950
	Not drawn	.1650	.1900
	Not drawn	.1883	.1950
New York (Manhattan)	Not drawn	.1817	.1858
	Not drawn	.1983	.2133
	Not drawn	.1708	.1750
	Not drawn	.1800	.2017
	Not drawn	.1358	.1450
Rochester	Not drawn	.1400	.1533
	Not drawn	.1467	.1483
Syracuse	Not drawn	.1667	.1700
	Not drawn	.2050	.2083
OHIO.			
Cincinnati	Drawn	.1908	.1900
	Drawn	.1742	.1750
	Drawn	.2250	.2217
Cleveland	Not drawn	.1475	.1517
	Not drawn	.1617	.1642
	Not drawn	.1508	.1683
Toledo	Not drawn	.1492	.1433
	Not drawn	.1346	.1296
OREGON.			
Portland	Not drawn	.1792	.1817
	Not drawn	.1933	.1917
PENNSYLVANIA.			
Philadelphia	Not drawn	.1717	.1650
	Not drawn	.1633	.1750
	Not drawn	.1692	.1558
	Not drawn	.1550	.1533
	Not drawn	.1717	.2117

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CHICKENS (YEAR OR MORE OLD), DRESSED, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
PENNSYLVANIA—concluded.			
Pittsburg (Allegheny)	Drawn	$0.2117	$0.2133
	Drawn	.2017	.2000
Pittsburg (Pittsburg)	Drawn	.1717	.1817
	Drawn	.2233	.2233
Scranton	Not drawn	.1850	.1867
	Not drawn	.1933	.1867
Wilkes-Barre	Not drawn	.1767	.1742
	Not drawn	.1717	.1750
RHODE ISLAND.			
Providence	Not drawn	.2067	.2233
	Not drawn	.2350	.2500
SOUTH CAROLINA.			
Charleston	Not drawn	.1667	.1999
	Not drawn	.1783	.1883
SOUTH DAKOTA.			
Sioux Falls	Drawn	.1138	.1171
	Not drawn	.1313	.1354
TENNESSEE.			
Memphis	Not drawn	.1475	.1500
	Not drawn	.1717	.1725
Nashville	Drawn	.1408	.1383
TEXAS.			
Dallas	Not drawn	.1467	.1467
	Not drawn	.1300	.1599
UTAH.			
Salt Lake City	Not drawn	.1833	.1817
	Not drawn	.2225	.2200
VIRGINIA.			
Norfolk	Not drawn	.1750	.1775
	Not drawn	.1867	.1900
Richmond	Not drawn	.1675	.1800
	Not drawn	.1608	.1817
WASHINGTON.			
Seattle	Not drawn	.2000	.2000
	Not drawn	.1967	.2000
	Not drawn	.1933	.2000
Tacoma	Not drawn	.1883	.1650
	Not drawn	.2056	.2017
WEST VIRGINIA.			
Wheeling	Drawn	.2125	.2175
	Drawn	.1733	.1788
WISCONSIN.			
Milwaukee	Not drawn	.1475	.1492
	Not drawn	.1200	.1200

COFFEE, ROASTED, PER POUND.

ALABAMA.			
Birmingham	Arbuckle's	$0.1813	$0.2000
	Mocha and Java	.2500	.2500
Montgomery	Arbuckle's	.2000	.2000
	Mocha and Java	.3500	.3500
ARKANSAS.			
Little Rock	Arbuckle's	.1750	.1813
	Rio	.2500	.2500
CALIFORNIA.			
Los Angeles	Costa Rica	.2500	.2500
	Rio, Golden	.2500	.2500
San Francisco	Arbuckle's Ariosa	.1750	.1750
	Costa Rica	.2500	.2500
	Costa Rica	.2500	.2500
	Costa Rica	.2500	.2500
	Java	.3500	.3500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

COFFEE, ROASTED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
COLORADO.			
Denver	Arbuckle's	$0.1729	$0.1500
	Bourbon, Santos, Bogota, and Rio	.2500	.2500
	Santos and Bourbon	.2500	.2500
CONNECTICUT.			
New Haven	Mocha and Java	.3500	.3500
	Mocha and Java	.3500	.3500
	Santos and Maracaibo	.2500	.2500
	Santos and Maracaibo	.2500	.2500
DELAWARE.			
Wilmington	Maracaibo	.2500	.2500
	Maracaibo	.3000	.3000
DISTRICT OF COLUMBIA.			
Washington	Mocha and Java	.2500	.2500
	Rio	.1500	.1500
	Santos	.2500	.2500
	Santos and Rio	.2000	.2000
FLORIDA.			
Jacksonville	Arbuckle's	.1917	.2000
	Rio	.1833	.2000
	Rio and Maracaibo	.2500	.2500
GEORGIA.			
Atlanta	Cuban	.2500	.2500
	Liberty Bell, blend	.2500	.2500
	Rio	.1500	.1500
ILLINOIS.			
Chicago	Rio	.1600	.1500
	Rio and Santos	.1500	.1500
	Rio and Santos	.1700	.1700
	Rio and Santos	.1700	.1800
	Santos	.2000	.2000
Peoria	Rio	.1800	.1800
	Santos	.2500	.2500
INDIANA.			
Indianapolis	Arbuckle's	.1633	.1700
	Arbuckle's	.1700	.1800
Terre Haute	Maracaibo	.3000	.3000
	Rio and Santos	.2000	.2000
IOWA.			
Des Moines	Mocha and Java	.3000	.3250
	Rio and Santos	.2000	.2000
Dubuque	Arbuckle's	.1958	.2000
	Crystal	.2090	.2000
KANSAS.			
Topeka	Blend	.2000	.2000
	Rio	.2000	.2000
KENTUCKY.			
Louisville	Rio	.2200	.2500
	Rio	.1500	.1500
LOUISIANA.			
New Orleans	Cordova	.2000	.2000
	Rio and Cordova	.2000	.2000
	Rio and Cordova	.2000	.2000
MAINE.			
Portland	Rio	.1500	.1500
	Rio	.1800	.1800
MARYLAND.			
Baltimore	Rio	.1600	.1600
	Rio	.1850	.1600
	Rio	.1600	.1600
	Rio	.1783	.1600
MASSACHUSETTS.			
Boston	Central and South American	.2500	.2500
	Mocha and Java	.3300	.3300
	Rio	.2000	.1867
Fall River	Bogota and Mexican	.2000	.2000
	Mocha and Java	.3000	.3000
Lynn	Blend	.3000	.3000
	South and Central American	.1900	.1900
Malden	Mocha and Java	.2000	.2000
	Mocha and Java	.3000	.3000
Worcester	Mocha and Java	.3300	.3300
	Mocha and Java	.3800	.3800

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

COFFEE, ROASTED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MICHIGAN.			
Detroit	Bogota	$0.2550	$0.2500
	Java and Maracaibo	.2500	.2500
Grand Rapids	Maracaibo	.2500	.2500
	Merique, blend	.3200	.3200
MINNESOTA.			
Duluth	Arbuckle's Ariosa	.1883	.2000
	Bell Gona, Brazil	.2000	.2000
Minneapolis	Arbuckle's Ariosa	.1917	.2000
	Java	.2500	.2500
	Mocha and Java	.3000	.3000
St. Paul	Arbuckle's	.1675	.1758
	Arbuckle's Ariosa	.1800	.1800
MISSOURI.			
Kansas City	Rio	.1500	.1500
	Santos	.2000	.2000
St. Louis	Guatemala	.2500	.2500
	Java	.2500	.2500
	Santos	.2000	.2000
	Santos	.2000	.2000
MONTANA.			
Butte	Bogota and Mexican	.3000	.3000
	Bourbon and Santos	.3000	.3000
NEBRASKA.			
Omaha	Mocha and Java	.2500	.2500
	Rio	.1500	.1500
NEW HAMPSHIRE.			
Manchester	Maracaibo	.3000	.3000
	Rio	.1742	.1500
	Santos	.2167	.2200
NEW JERSEY.			
Jersey City	Maracaibo	.2500	.2500
	Mocha and Java	.2500	.2500
Trenton	Java and Maracaibo	.3000	.3000
	Rio	.2000	.2000
	Santos	.2000	.2000
NEW YORK.			
Albany	Maracaibo	.2500	.2500
	Mocha and Java	.3000	.3000
Buffalo	Maracaibo	.2500	.2500
	Maracaibo and Santos	.3500	.3500
New York (Brooklyn)	Java and Maracaibo	.3200	.3200
	Maracaibo	.3000	.3000
	Rio	.2000	.2000
New York (Manhattan)	Java	.2500	.2500
	Maracaibo	.1700	.1700
	Rio	.1700	.1700
	Rio, Golden	.1767	.1767
	Rio, Golden	.1800	.1800
Rochester	Rio	.1800	.1800
	Rio	.2000	.1600
	Rio, Golden	.2000	.2000
Syracuse	Princess Blend	.2500	.2500
	Santos	.2000	.2000
OHIO.			
Cincinnati	Santos	.2000	.2000
	Santos	.2000	.2000
	Santos	.2000	.2000
	Santos	.2000	.2000
Cleveland	Rio	.2000	.2000
	Rio	.2000	.2000
	Rio	.1725	.1800
	Rio	.1400	.1400
	Santos	.1800	.1800
Toledo	Mocha and Java	.3500	.3500
	Rio	.1500	.1500
OREGON.			
Portland	Costa Rica	.2500	.2500
	Mocha and Java	.2500	.2500
PENNSYLVANIA.			
Philadelphia	Java	.3500	3500
	Rio	.2000	2000
	Rio	.2000	.2000
	Santos	.1800	.1800
	Santos	.2000	.2000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

COFFEE, ROASTED, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	1907.
PENNSYLVANIA—concluded.			
Pittsburg (Allegheny)	Arbuckle's	$0.1667	$0.1800
	Arbuckle's	.1600	.1800
Pittsburg (Pittsburg)	Arbuckle's	.1733	.1800
	Arbuckle's	.1725	.1800
Scranton	Mocha and Java	.2500	.2500
	Rio	.2500	.2500
Wilkes-Barre	Rio, Golden	.2500	.2500
	Rio	.2500	.2500
RHODE ISLAND.			
Providence	Java	.3000	.3000
	Java	.3500	.3500
	Java, Padang	.3000	.3000
SOUTH CAROLINA.			
Charleston	Maracaibo	.2000	.2000
	Rio	.1500	.1500
SOUTH DAKOTA.			
Sioux Falls	Santos	.2000	.2000
	Santos	.2000	.2000
TENNESSEE.			
Memphis	Rio and Java	.2500	.2500
	Rio and Java	.2500	.2500
	Rio, Santos, and Maracaibo	.2200	.2200
Nashville	Rio	.2000	.2242
	Santos and Maracaibo	.2500	.2500
TEXAS.			
Dallas	Arbuckle's	.2000	.2000
	Rio	.2000	.2000
San Antonio	Arbuckle's	.1750	.1750
	Mexican Cordova	.2000	.2167
UTAH.			
Salt Lake City	Arbuckle's	.2250	.2250
	Schelling's Star	.2500	.2500
VIRGINIA.			
Norfolk	Mocha and Java	.3500	.3500
	Rio and Santos	.2000	.2000
Richmond	Arbuckle's	.1783	.1800
	Rio	.2500	.2500
	Rio and La Guaira	.2000	.2000
WASHINGTON.			
Seattle	Costa Rica	.2500	.2500
	Pea berry and Caracola	.2500	.2500
Tacoma	Costa Rica and Guatemala	.2500	.2500
	Santos	.2500	.2500
WEST VIRGINIA.			
Wheeling	Rio, Arbuckle's	.1542	.1600
	Rio, Arbuckle's	.1600	.1600
WISCONSIN.			
Milwaukee	Rio	.1500	.1500
	Rio, Golden	.1800	.2000

CORN MEAL, PER POUND.

ALABAMA.			
Birmingham	White, sold in 9-pound lots	$0.0222	$0.0250
	White, sold in 12-pound lots	.0184	.0222
	White, sold in 12-pound lots	.0208	.0208
Montgomery	White, sold in 11½-pound lots, 1906; 12-pound lots, 1907.	.0174	.0167
	White, sold in 12-pound lots	.0174	.0208
	White, sold in 12-pound lots	.0174	.0208
ARKANSAS.			
Little Rock	White, sold in 12-pound lots	.0208	.0208
	White, sold in 12-pound lots	.0167	.0181
	White, sold in 12-pound lots	.0208	.0208

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CORN MEAL, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
CALIFORNIA.			
Los Angeles	White, sold in 10-pound lots	$0.0300	$0.0317
	Yellow, sold in 10-pound lots	.0250	.0275
San Francisco	White, sold in 10-pound lots	.0450	.0450
	White, sold in 10-pound lots	.0300	.0300
	Yellow, sold in 10-pound lots	.0300	.0350
	Yellow, sold in 10-pound lots	.0300	.0300
COLORADO.			
Denver	White, sold in 10-pound lots	.0250	.0250
	White, sold in 10-pound lots	.0200	.0200
CONNECTICUT.			
New Haven	Yellow, granulated, sold in 10-pound lots	.0250	.0308
	Yellow, sold in 10-pound lots	.0350	.0350
DELAWARE.			
Wilmington	White, sold in 2-pound lots	.0250	.0300
	White, sold in 2-pound lots	.0250	.0271
	White, sold in 2-pound lots	.0250	.0258
DISTRICT OF COLUMBIA.			
Washington	White	.0167	.0194
	White	.0167	.0178
	White, sold in 12-pound lots	.0167	.0171
	White, sold in 12-pound lots	.0167	.0167
FLORIDA.			
Jacksonville	White, sold in 10-pound lots	.0238	.0250
	White, sold in 10-pound lots	.0250	.0300
	White, sold in 10-pound lots	.0200	.0200
GEORGIA.			
Atlanta	White, sold in 12-pound lots	.0208	.0212
	White, sold in 12-pound lots	.0181	.0208
	White, sold in 12-pound lots	.0167	.0191
ILLINOIS.			
Chicago	Cream, yellow	.0250	.0250
	Yellow, sold in 2-pound lots	.0250	.0250
	Yellow, sold in 10-pound lots	.0250	.0250
	White	.0200	.0275
Peoria	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0200	.0200
INDIANA.			
Indianapolis	White	.0200	.0200
	White	.0200	.0213
Terre Haute	White, sold in 6-pound lots	.0167	.0167
	White, sold in 12½-pound lots	.0160	.0160
IOWA.			
Des Moines	Yellow, sold in 10-pound lots	.0171	.0200
	Yellow, sold in 10-pound lots	.0125	.0152
Dubuque	Yellow, sold in 10-pound lots	.0200	.0225
	Yellow, sold in 10-pound lots	.0200	.0200
KANSAS.			
Topeka	White, sold in 6-pound lots	.0167	.0167
	White, sold in 6¼-pound lots	.0160	.0160
KENTUCKY.			
Louisville	White, sold in 10-pound lots	.0200	.0213
	White, sold in 10-pound lots	.0200	.0217
	White, sold in 10-pound lots	.0220	.0225
LOUISIANA.			
New Orleans	White	.0250	.0250
	White	.0250	.0250
	White	.0250	.0288
	White, kiln dried	.0250	.0292
MAINE.			
Portland	Yellow	.0300	.0308
	Yellow, sold in 10-pound lots	.0250	.0263
MARYLAND.			
Baltimore	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0250	.0250
MASSACHUSETTS.			
Boston	Yellow, granulated, sold in 10-pound lots	.0283	.0313
	Yellow, sold in 10-pound lots	.0350	.0313
	Yellow, sold in 10-pound lots	.0242	.0250

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CORN MEAL, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MASSACHUSETTS—concluded.			
Fall River	White	$0.0300	$0.0350
	White, sold in 12½-pound lots	.0400	.0400
Lynn	Yellow, granulated, sold in 10-pound lots	.0250	.0275
	Yellow, sold in 10-pound lots	.0200	.0233
Malden	Yellow, sold in 10-pound lots	.0250	.0250
	Yellow, sold in 10-pound lots	.0250	.0300
Worcester	White, sold in 10-pound lots	.0300	.0350
	Yellow, sold in 10-pound lots	.0250	.0350
MICHIGAN.			
Detroit	Yellow, sold in 10-pound lots	.0200	.0225
	Yellow, sold in 10-pound lots	.0197	.0217
Grand Rapids	Yellow, granulated, sold in 12½-pound lots Jan. to Sept., 1906, and 1907; and in 15-pound lots Oct. to Dec., 1906.	.0195	.0204
	Yellow, sold in 10-pound lots	.0200	.0200
MINNESOTA.			
Duluth	Yellow, sold in 10-pound lots	.0250	.0250
	Yellow, sold in 10-pound lots	.0200	.0200
Minneapolis	Yellow, sold in 10-pound lots	.0250	.0250
	Yellow, sold in 10-pound lots	.0200	.0200
St. Paul	Yellow	.0200	.0217
	Yellow, sold in 10-pound lots	.0200	.0242
MISSOURI.			
Kansas City	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0150	.0150
St. Louis	White, sold in 10-pound lots	.0250	.0250
	White, sold in 12-pound lots	.0167	.0167
	White, sold in 12-pound lots	.0167	.0167
MONTANA.			
Butte	White or yellow, sold in 10-pound lots	.0250	.0296
	White or yellow, sold in 10-pound lots	.0350	.0350
NEBRASKA.			
Omaha	White or yellow, sold in 10-pound lots	.0150	.0200
	White or yellow, sold in 10-pound lots	.0200	.0200
NEW HAMPSHIRE.			
Manchester	Yellow, sold in 10-pound lots	.0250	.0279
	Yellow, sold in 10-pound lots	.0217	.0288
NEW JERSEY.			
Jersey City	White, sold in 10-pound lots	.0250	.0250
	Yellow, sold in 10-pound lots	.0280	.0295
Trenton	Yellow, sold in 10-pound lots	.0250	.0250
	Yellow, sold in 10-pound lots	.0250	.0250
NEW YORK.			
Albany	Yellow, sold in 10-pound lots	.0250	.0300
	Yellow, sold in 10-pound lots	.0250	.0254
Buffalo	Yellow, sold in 10-pound lots	.0200	.0225
	Yellow, sold in 10-pound lots	.0200	.0200
New York (Brooklyn)	White	.0300	.0325
	Yellow, sold in 3½-pound lots	.0286	.0300
	Yellow, sold in 3½-pound lots	.0343	.0343
New York (Manhattan)	White, kiln dried, sold in 10-pound lots	.0250	.0268
	Yellow	.0300	.0300
	Yellow	.0400	.0400
	Yellow, kiln dried	.0300	.0300
	Yellow, kiln dried	.0300	.0300
	Yellow, sold in 3½-pound lots	.0296	.0286
Rochester	Yellow	.0300	.0300
	Yellow	.0250	.0300
Syracuse	Yellow, sold in 10-pound lots	.0200	.0213
	Yellow, sold in 10-pound lots	.0300	.0300
OHIO.			
Cincinnati	White	.0250	.0250
	White	.0250	.0275
	White	.0250	.0250
Cleveland	Yellow	.0250	.0300
	Yellow, granulated	.0250	.0250
	Yellow, granulated	.0250	.0250
Toledo	Yellow	.0250	.0300
	Yellow	.0200	.0200

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

CORN MEAL, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
OREGON.			
Portland	White, sold in 10-pound lots	$0.0300	$0.0300
	White, sold in 10-pound lots	.0250	.0275
PENNSYLVANIA.			
Philadelphia	Yellow	.0250	.0263
	Yellow	.0250	.0250
	Yellow, granulated	.0250	.0250
Pittsburg (Allegheny)	Yellow, sold in 10-pound lots	.0220	.0255
	Yellow, sold in 10-pound lots	.0250	.0257
Pittsburg (Pittsburg)	White, sold in 10-pound lots	.0250	.0250
	White, sold in 10-pound lots	.0250	.0258
Scranton	White	.0400	.0300
	Yellow	.0300	.0333
Wilkes-Barre	Yellow, sold in 10-pound lots	.0250	.0250
	Yellow, sold in 10-pound lots	.0250	.0250
RHODE ISLAND.			
Providence	White, granulated, sold in 10-pound lots	.0250	.0300
	White, granulated, sold in 10-pound lots	.0250	.0385
	Yellow, sold in 10-pound lots	.0258	.0300
SOUTH CAROLINA.			
Charleston	White, sold in 10-pound lots	.0180	.0208
	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0200	.0220
SOUTH DAKOTA.			
Sioux Falls	Yellow, sold in 10-pound lots	0242	.0250
	Yellow, sold in 10-pound lots	.0200	.0250
TENNESSEE.			
Memphis	White, sold in 12-pound lots	.0167	.0167
	White, sold in 12½-pound lots	.0200	.0200
	White, sold in 12½-pound lots	.0200	.0240
Nashville	White, sold in 12-pound lots	.0167	.0191
	White, sold in 12-pound lots	.0208	.0208
	White, sold in 12-pound lots	.0208	.0208
TEXAS.			
Dallas	White, sold in 8-pound lots	.0313	.0313
	White, sold in 10-pound lots 1906; 8-pound lots 1907.	.0250	.0313
	White, sold in 10-pound lots Jan., 1906, to Jan., 1907; 8-pound lots Feb. to Dec., 1907.	.0250	.0308
San Antonio	White, sold in 10-pound lots	.0200	.0238
	White, sold in 10-pound lots, 1906; 8½-pound lots 1907.	.0183	.0210
	White, sold in 10-pound lots, 1906; 35-pound bags, 1907.	.0180	.0200
UTAH.			
Salt Lake City	White, sold in 10-pound lots	.0250	.0267
VIRGINIA.			
Norfolk	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0200	.0200
	White, sold in 12½-pound lots	.0200	.0200
Richmond	White, sold in 12-pound lots	.0167	.0177
	White, sold in 12-pound lots	.0167	.0188
	White, sold in 12½-pound lots	.0160	.0176
WASHINGTON.			
Seattle	Yellow, sold in 10-pound lots	.0250	.0308
	Yellow, sold in 10-pound lots	.0250	.0263
Tacoma	Yellow, sold in 10-pound lots	.0279	.0313
	Yellow, sold in 10-pound lots	.0300	.0325
WEST VIRGINIA.			
Wheeling	White, sold in 10-pound lots	.0200	.0200
	White, sold in 10-pound lots	.0250	.0250
	White, sold in 10-pound lots	.0250	.0263
WISCONSIN.			
Milwaukee	White	.0250	.0250
	White, kiln dried	.0250	.0300

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

EGGS, FRESH, PER DOZEN.

State and locality.	Description.	Average price.	
		1906.	1907.
ALABAMA.			
Birmingham	Fresh	$0.2188	$0.2542
	Fresh	.2417	.2500
	Fresh	.2275	.2458
Montgomery	Fresh	.2150	.2125
	Fresh	.2375	.2375
	Fresh	.2667	.2542
ARKANSAS.			
Little Rock	Fresh	.2583	.2229
	Fresh	.2875	.2750
	Fresh	.2650	.2667
CALIFORNIA.			
Los Angeles	Fresh	.3417	.3583
	Fresh	.3292	.3167
	Fresh	.3125	.3208
San Francisco	Fresh	.3625	.4292
	Fresh	.3542	.4292
	Fresh	.3667	.4333
	Fresh	.3646	.3792
COLORADO.			
Denver	Fresh	.2375	.2583
	Fresh	.2583	.2708
	Fresh	.2500	.2500
CONNECTICUT.			
New Haven	Fresh	.3375	.4008
	Fresh	.3875	.3792
	Fresh	.3708	.3875
DELAWARE.			
Wilmington	Fresh	.3425	.3525
	Fresh	.3025	.2967
	Fresh	.3267	.3458
DISTRICT OF COLUMBIA.			
Washington	Fresh	.2783	.2717
	Fresh	.2667	.2883
	Fresh	.2783	.2767
	Fresh	.2800	.2658
FLORIDA.			
Jacksonville	Fresh	.3042	.2833
	Fresh	.2850	.3167
	Fresh	.2958	.3083
GEORGIA.			
Atlanta	Fresh	.2667	.2575
	Fresh	.2417	.2208
	Fresh	.2296	.2183
ILLINOIS.			
Chicago	Fresh	.2450	.2442
	Fresh	.2242	.2317
	Fresh	.2458	.2667
	Fresh	.2392	.2775
Peoria	Fresh	.2483	.2517
	Fresh	.2567	.2608
	Fresh	.2517	.2325
INDIANA.			
Indianapolis	Fresh	.2392	.2417
	Fresh	.2292	.2575
	Fresh	.2383	.2467
Terre Haute	Fresh	.2550	.2683
	Fresh	.2533	.2175
	Fresh	.2608	.2275
IOWA.			
Des Moines	Fresh	.2500	.2408
	Fresh	.2329	.2333
	Fresh	.2508	.2517
Dubuque	Fresh	.2233	.2217
	Fresh	.2204	.2175
	Fresh	.2246	.2025
KANSAS.			
Topeka	Fresh	.2067	.2258
	Fresh	.1950	.2008
	Fresh	.2067	.2442

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

EGGS, FRESH, PER DOZEN—Continued.

State and locality.	Description.	Average price.	
		1906.	1907
KENTUCKY.			
Louisville	Fresh	$0.2258	$0.2375
	Fresh	.2083	.2083
	Fresh	.2250	.2271
LOUISIANA.			
New Orleans	Fresh	.2438	.2542
	Fresh	.2208	.2550
	Fresh	.2875	.2917
	Fresh	.2633	.2729
MAINE.			
Portland	Fresh	.2933	.3242
	Fresh	.3275	.3300
	Fresh	.3075	.3083
MARYLAND.			
Baltimore	Fresh	.2808	.2667
	Fresh	.2525	.2692
	Fresh	.2517	.2675
	Fresh	.2825	.3033
MASSACHUSETTS.			
Boston	Fresh	.2908	.2917
	Fresh	.2450	.2792
	Fresh	.2475	.2458
	Fresh	.3075	.3267
Fall River	Fresh	.2817	.2925
	Fresh	.3283	.3283
	Fresh	.3008	.3142
Lynn	Fresh	.2883	.2775
	Fresh	.3550	.3942
	Fresh	.3625	.3867
Malden	Fresh	.2700	.2850
	Fresh	.2842	.2933
	Fresh	.2833	.2950
Worcester	Fresh	.3475	.3658
	Fresh	.3450	.3442
	Fresh	.3383	.3342
MICHIGAN.			
Detroit	Fresh	.2300	.2408
	Fresh	.2342	.2442
	Fresh	.2517	.2642
Grand Rapids	Fresh	.2317	.2450
	Fresh	.2433	.2642
	Fresh	.2392	.2225
	Fresh	.2175	.2250
MINNESOTA.			
Duluth	Fresh	.2367	.2133
	Fresh	.2508	.2425
	Fresh	.2442	.2474
Minneapolis	Fresh	.2192	.2308
	Fresh	.2283	.2350
	Fresh	.2500	.2267
St. Paul	Fresh	.2300	.2275
	Fresh	.2300	.2608
	Fresh	.2142	.2067
MISSOURI.			
Kansas City	Fresh	.2492	.2442
	Fresh	.2425	.2483
	Fresh	.2367	.2283
St. Louis	Fresh	.2188	.2233
	Fresh	.2217	.2250
	Fresh	.2550	.2683
	Fresh	.2433	.2500
MONTANA.			
Butte	Fresh	.3083	.3125
	Fresh	.3250	.2917
	Fresh	.3208	.3333
NEBRASKA.			
Omaha	Fresh	.2242	.2442
	Fresh	.2225	.2375
	Fresh	.2250	.2133
NEW HAMPSHIRE.			
Manchester	Fresh	.2875	.2975
	Fresh	.3250	.3433
	Fresh	.3042	.2967

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

EGGS, FRESH, PER DOZEN—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW JERSEY.			
Jersey City	Fresh	$0.2808	$0.3300
	Fresh	.2633	.2617
	Fresh	.2842	.3092
Trenton	Fresh	.2875	.2925
	Fresh	.3508	.3225
	Fresh	.3450	.3317
NEW YORK.			
Albany	Fresh	.3233	.3158
	Fresh	.2925	.3317
	Fresh	.2633	.2833
Buffalo	Fresh	.2550	.2800
	Fresh	.2275	.2392
	Fresh	.2558	.2633
	Fresh	.2492	.2758
	Fresh	.2500	.2417
New York (Brooklyn)	Fresh	.3150	.3325
	Fresh	.3025	.3300
	Fresh	.3075	.3142
	Fresh	.3258	.3350
	Fresh	.2267	.2383
New York (Manhattan)	Fresh	.3033	.3058
	Fresh	.3890	.3883
	Fresh	.3158	.3042
	Fresh	.3675	.3758
	Fresh	.3000	.3150
	Fresh	.2917	.2992
Rochester	Fresh	.2725	.2958
	Fresh	.2383	.2433
	Fresh	.2542	.2858
Syracuse	Fresh	.2933	.3208
	Fresh	.2808	.2917
	Fresh	.3358	.3183
OHIO.			
Cincinnati	Fresh	.2567	.2675
	Fresh	.2492	.2550
	Fresh	.2508	.2717
	Fresh	.2358	.2383
Cleveland	Fresh	.2800	.3058
	Fresh	.3233	.3450
	Fresh	.2817	.3108
	Fresh	.2700	.2775
Toledo	Fresh	.2625	.2775
	Fresh	.2308	.2383
	Fresh	.2567	.2558
OREGON.			
Portland	Fresh	.3208	.3542
	Fresh	.3013	.2875
	Fresh	.3021	.3625
PENNSYLVANIA.			
Philadelphia	Fresh	.2792	.2883
	Fresh	.2883	.3150
	Fresh	.2467	.2525
	Fresh	.3175	.3150
	Fresh	.3000	.3042
	Fresh	.2558	.2700
Pittsburg (Allegheny)	Fresh	.2558	.2750
	Fresh	.3058	.2783
	Fresh	.2483	.2625
Pittsburg (Pittsburg)	Fresh	.3292	.3208
	Fresh	.2600	.2550
	Fresh	.2775	.2642
Scranton	Fresh	.3017	.3025
	Fresh	.3208	.2875
	Fresh	.3192	.3150
Wilkes-Barre	Fresh	.3192	.2833
	Fresh	.3133	.3217
	Fresh	.3542	.3092
RHODE ISLAND.			
Providence	Fresh	.3025	.3308
	Fresh	.2458	.2467
	Fresh	.3542	.3208

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

EGGS, FRESH, PER DOZEN—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
SOUTH CAROLINA.			
Charleston	Fresh	$0.2542	$0.2667
	Fresh	.2667	.2575
	Fresh	.2450	.2475
	Fresh	.2375	.2350
SOUTH DAKOTA.			
Sioux Falls	Fresh	.2100	.1842
	Fresh	.2192	.1792
	Fresh	.1967	.1967
TENNESSEE.			
Memphis	Fresh	.2458	.2750
	Fresh	.2483	.2292
	Fresh	.2683	.2542
Nashville	Fresh	.1854	.2083
	Fresh	.2267	.2375
	Fresh	.2408	.2658
TEXAS.			
Dallas	Fresh	.2125	.2542
	Fresh	.2375	.2458
	Fresh	.2375	.2500
San Antonio	Fresh	.1958	.2208
	Fresh	.2313	.2425
	Fresh	.2292	.2542
UTAH.			
Salt Lake City	Fresh	.2792	.3000
	Fresh	.2708	.2667
VIRGINIA.			
Norfolk	Fresh	.2525	.2625
	Fresh	.2783	.2600
	Fresh	.2492	.2500
Richmond	Fresh	.2542	.2617
	Fresh	.2492	.2708
	Fresh	.2633	.2533
WASHINGTON.			
Seattle	Fresh	.3708	.3708
	Fresh	.3417	.3625
	Fresh	.3458	.3875
Tacoma	Fresh	.2804	.3250
	Fresh	.3592	.3500
	Fresh	.3358	.3917
WEST VIRGINIA.			
Wheeling	Fresh	.2483	.2667
	Fresh	.2767	.2583
	Fresh	.2517	.2450
WISCONSIN.			
Milwaukee	Fresh	.2325	.2267
	Fresh	.2533	.2025
	Fresh	.2008	.1983

FISH, FRESH, PER POUND.

ALABAMA.			
Birmingham	Red snapper, cleaned	$0.1354	$0.1667
	Red snapper, steak	.1500	.1708
Montgomery	Mullet, not cleaned	.0600	.0600
	Red snapper, cleaned	.1250	.1250
ARKANSAS.			
Little Rock	Buffalo or drum, cleaned	.0833	.1000
	Red snapper, cleaned	.1500	.1625
CALIFORNIA.			
Los Angeles	Halibut	.1000	.1000
	Halibut	.1000	.1000
San Francisco	Salmon, cleaned	.1750	.1875
	Salmon, cleaned	.1708	.1833
	Salmon, cleaned	.1467	.1875
	Salmon, cleaned	.1833	.2000
COLORADO.			
Denver	Halibut	.1375	.1375
	Halibut, cleaned	.1500	.1500
	Salmon, cleaned	.1604	.1854

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FISH, FRESH, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
CONNECTICUT.			
New Haven	Haddock	$0.1000	$0.1000
	Haddock, cleaned	.0900	.0900
	Halibut, steak	.2300	.2225
DELAWARE.			
Wilmington	Haddock	.1200	.1200
	Trout, not cleaned	.1200	.1275
DISTRICT OF COLUMBIA.			
Washington	Cod, steak	.1279	.1267
	Halibut, steak	.1750	.1717
	White perch, large, not cleaned	.1458	.1650
	White perch, small, not cleaned	.1146	.1188
FLORIDA.			
Jacksonville	Mullet, not cleaned	.0500	.0500
	Mullet, not cleaned	.0500	.0542
	Mullet, not cleaned, sold in 5-pound strings.	.0500	.0500
GEORGIA.			
Atlanta	Red snapper, partly cleaned	.1000	.1208
	Red snapper, steak	.1333	.1500
	Trout, partly cleaned	.1225	.1500
ILLINOIS.			
Chicago	Whitefish, cleaned	.1408	.1483
	Whitefish, cleaned	.1513	.1600
	Yellow perch, not cleaned	.0808	.0800
Peoria	Catfish, cleaned	.1267	.1500
	Catfish, cleaned	.1358	.1358
	Whitefish, cleaned	.1792	.1958
INDIANA.			
Indianapolis	Whitefish, cleaned	.2000	.2000
	Whitefish, cleaned	.2000	.2000
Terre Haute	Halibut, Pacific	.1500	.1500
	Lake trout, cleaned	.1458	.1467
IOWA.			
Des Moines	Buffalo, cleaned	.1000	.1000
	Lake trout, cleaned	.1500	.1500
Dubuque	Lake trout, cleaned	.1750	.1750
	River salmon, cleaned	.1417	.1250
KANSAS.			
Topeka	Catfish, cleaned	.1600	.2000
	Catfish, cleaned	.1625	.2000
KENTUCKY.			
Louisville	Buffalo, not cleaned	.1000	.1000
	Buffalo, not cleaned	.1000	.1000
LOUISIANA.			
New Orleans	Red snapper, cleaned	.1000	.1100
	Red snapper, cleaned	.1000	.1083
	Red snapper, cleaned	.1000	.1104
MAINE.			
Portland	Haddock, cleaned	.0700	.0642
	Haddock, cleaned	.0667	.0700
MARYLAND.			
Baltimore	White perch, not cleaned	.1233	.1225
	White perch, large, not cleaned	.1217	.1217
	Yellow perch, not cleaned	.1333	.1033
	Yellow perch, not cleaned	.1033	.1000
MASSACHUSETTS.			
Boston	Cod or haddock	.0825	.0800
	Cod or haddock	.0758	.0758
	Haddock	.0683	.0725
Fall River	Cod, steak	.0967	.0975
	Haddock, cleaned	.0842	.0867
Lynn	Haddock	.0583	.0658
	Haddock	.0667	.0692
Malden	Cod	.0617	.0700
	Cod	.0708	.0700
	Haddock	.0708	.0692
Worcester	Halibut, steak	.2500	.2500
	Halibut, steak	.2333	.2450

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FISH, FRESH, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MICHIGAN.			
Detroit	Lake trout, cleaned	$0.1500	$0.1550
	Whitefish, cleaned	.1500	.1550
Grand Rapids	Whitefish, partly cleaned	.1708	.1817
	Whitefish, partly cleaned	.1600	.1600
MINNESOTA.			
Duluth	Trout, cleaned	.1313	.1271
	Trout, partly cleaned	.1254	.1354
Minneapolis	Pickerel, cleaned	.1000	.1000
	Pike, cleaned	.1417	.1500
St. Paul	Pike, partly cleaned	.1071	.1286
	Pike, partly cleaned	.1057	.1321
MISSOURI.			
Kansas City	Carp, cleaned	.1000	.1000
	Catfish, cleaned	.1708	.1708
St. Louis	Carp, not cleaned	.1063	.1083
	Lake pike, not cleaned	.1621	.1617
	Mackerel, cleaned	.1888	.1883
MONTANA.			
Butte	Salmon, cleaned	.1479	.1500
	Salmon, cleaned	.1371	.1592
NEBRASKA.			
Omaha	Catfish, cleaned	.1800	.1850
	Lake trout, partly cleaned	.1300	.1500
NEW HAMPSHIRE.			
Manchester	Haddock, whole, cleaned	.0617	.0633
	Haddock, whole, cleaned	.0592	.0642
NEW JERSEY.			
Jersey City	Cod	.1167	.1350
	Cod, cleaned	.1325	.1171
Trenton	Cod, steak	.1438	.1438
	Weakfish	.1250	.1250
NEW YORK.			
Albany	Cod, not cleaned	.0729	.0729
	Haddock, not cleaned	.0683	.0683
Buffalo	Perch, cleaned	.1225	.1200
	Whitefish, cleaned	.1500	.1500
	Yellow pike, cleaned	.1475	.1500
New York (Brooklyn)	Cod, steak	.1592	.1600
	Cod, steak	.1475	.1417
	Cod, steak	.1400	.1400
New York (Manhattan)	Cod, steak	.1167	.1183
	Cod, steak	.1542	.1592
	Haddock, whole, not cleaned	.0975	.0958
Rochester	Cod, steak	.1250	.1207
	Whitefish, not cleaned	.1575	.1683
Syracuse	Cod, steak	.1317	.1333
	Halibut, steak	.1933	.1917
OHIO.			
Cincinnati	Lake salmon, not cleaned	.1438	.1708
	Whitefish, not cleaned	.1625	.2000
	Whitefish, not cleaned	.1775	.1692
	Whitefish, not cleaned	.1479	.1438
	Yellow salmon, not cleaned	.1333	.1354
Cleveland	Perch, not cleaned	.1000	.1000
	Whitefish, cleaned	.1467	.1683
	Whitefish, not cleaned	.1517	.1600
Toledo	Whitefish, cleaned	.1650	.1800
	Whitefish, cleaned	.1700	.1700
OREGON.			
Portland	Salmon, cleaned	.1146	.1208
	Salmon, cleaned	.1208	.1438
	Salmon, cleaned	.1250	.1292
PENNSYLVANIA.			
Philadelphia	Cod, cleaned	.1175	.1142
	Haddock, cleaned	.0700	.0700
	Halibut, eastern, cleaned	.2550	.2775
	Halibut, western, cleaned	.2142	.1950
Pittsburg (Allegheny)	Lake salmon, cleaned	.1500	.1500
	Lake salmon, not cleaned	.1500	.1500
Pittsburg (Pittsburg)	Lake salmon, not cleaned	.1300	.1300
	Lake salmon, not cleaned	.1300	.1300

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FISH, FRESH, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
PENNSYLVANIA—concluded.			
Scranton	Haddock	$0.0950	$0.1000
	Sea trout, cleaned	.1400	.1400
	Weakfish, not cleaned	.1250	.1392
Wilkes-Barre	Blue pike, not cleaned	.1250	.1063
	Haddock	.1000	.0900
RHODE ISLAND.			
Providence	Haddock, cleaned	.1067	.1067
	Haddock, cleaned	.1000	.1000
	Haddock, not cleaned	.0508	.0492
SOUTH CAROLINA.			
Charleston	Blackfish, not cleaned	.0800	.0800
	Blackfish, not cleaned	.0675	.0675
SOUTH DAKOTA.			
Sioux Falls	Lake fish, not cleaned	.1333	.1375
	Lake fish, not cleaned	.1333	.1333
TENNESSEE.			
Memphis	Buffalo, cleaned	.1000	.1000
	Buffalo, cleaned	.1000	.1250
	Red snapper, cleaned	.1500	.1313
Nashville	Black bass, cleaned	.1500	.1500
	Red snapper, cleaned	.1188	.1250
TEXAS.			
Dallas	Redfish, not cleaned	.1250	.1250
	Trout or redfish, cleaned	.1250	.1313
San Antonio	Trout or redfish, cleaned	.1250	.1250
	Trout or sheepshead, cleaned	.1250	.1292
UTAH.			
Salt Lake City	Halibut, cleaned	.1417	.1500
	Salmon, cleaned	.1750	.1938
	Salmon, cleaned	.2000	.2000
VIRGINIA.			
Norfolk	Sea trout, not cleaned	.1375	.1317
	Sea trout, not cleaned	.1083	.1121
Richmond	Rock, or striped bass, not cleaned	.1888	.1975
	Rock, or striped bass, not cleaned	.1723	.1733
	White perch, not cleaned	.1350	.1363
	White perch, not cleaned	.1250	.1250
WASHINGTON.			
Seattle	Halibut, cleaned	.0858	.1033
	Salmon, cleaned	.1146	.1142
	Salmon, cleaned	.0950	.1058
Tacoma	Halibut, cleaned	.1104	.1104
	Salmon, cleaned	.1125	.1125
WEST VIRGINIA.			
Wheeling	Sager or jackfish, not cleaned	.1250	.1250
	Sager or jackfish, not cleaned	.1000	.1000
WISCONSIN.			
Milwaukee	Lake trout, cleaned	.1500	.1500
	Lake trout, cleaned	.1200	.1400

FISH, SALT, PER POUND.

ALABAMA.			
Birmingham	Cod, boneless	$0.1750	$0.1750
	Mackerel, No. 1	.1667	.2000
Montgomery	Mackerel, No. 2	.1467	.1500
	Mackerel, No. 3	.1000	.1000
ARKANSAS.			
Little Rock	Cod, boneless	.1500	.1500
	Mackerel, Sea King, No. 1	.1250	.1250
CALIFORNIA.			
Los Angeles	Cod, sold in 3-pound lots	.0833	.0833
	Cod, sold in 3-pound lots	.0833	.0833
San Francisco	Cod, Alaska, strip	.1000	.1000
	Cod, Neptune	.1750	.1750
	Mackerel, No. 1	.1700	.1700

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FISH, SALT, PER POUND—Continued.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
COLORADO.			
Denver	Mackerel, No. 2	$0.2000	$0.2000
	Mackerel, No. 3	.1250	.1250
CONNECTICUT.			
New Haven	Cod, whole	.1000	.1200
	Cod, whole	.1200	.1200
	Mackerel, No. 1	.2000	.2000
DELAWARE.			
Wilmington	Cod, shredded, 1-pound packages	.1000	.1000
	Cod, shredded, 1-pound packages	.1000	.1000
DISTRICT OF COLUMBIA.			
Washington	Cod	.1200	.1458
	Cod	.1000	.1075
	Mackerel, No. 1	.1500	.1500
	Mackerel, No. 2	.1250	.1250
FLORIDA.			
Jacksonville	Cod, sold in 1-pound bricks	.1083	.1200
	Mackerel, No. 2	.1500	.1500
	Mackerel, No. 3	.1000	.1000
GEORGIA.			
Atlanta	Mackerel, No. 1	.1542	.1500
	Mackerel, No. 2	.1089	.1000
ILLINOIS.			
Chicago	Cod	.1000	.1425
	Cod	.1200	.1200
	Cod, boneless	.1000	.1000
	Mackerel, No. 1	.1650	.1800
	Mackerel, No. 1	.1600	.1600
	Mackerel, No. 1	.1500	.1800
Peoria	Cod, sold in bricks	.1000	.1000
	Mackerel, No. 2	.1200	.1200
INDIANA.			
Indianapolis	Cod, boneless	.1500	.1500
	Cod, boneless	.1250	.1250
Terre Haute	Cod, boneless, 3 and 5 pound boxes	.2000	.2000
	Cod, boneless, 1-pound packages	.1500	.1358
IOWA.			
Des Moines	Mackerel	.2375	.2875
	Mackerel, No. 1	.1500	.1500
Dubuque	Cod, boneless	.1500	.1500
	Mackerel, No. 1	.2000	.2000
KANSAS.			
Topeka	Mackerel, No. 1	.1800	.2000
	Mackerel, No. 1	.1500	.1500
KENTUCKY.			
Louisville	Mackerel, No. 1	.2250	.2083
	Mackerel, No. 2	.1500	.1500
LOUISIANA.			
New Orleans	Cod, boneless	.0767	.1000
	Cod, boneless	.1000	.1250
	Mackerel, No. 1	.1000	.1000
MAINE.			
Portland	Cod, whole	.1000	.1000
	Cod, whole	.0800	.0800
MARYLAND.			
Baltimore	Cod, boneless, 1-pound bricks	.1000	.1000
	Cod, boneless, 1-pound bricks	.1000	.1000
	Mackerel, No. 1	.1033	.1133
MASSACHUSETTS.			
Boston	Cod, boneless, in boxes	.1500	.1500
	Cod, whole	.0800	.0800
	Mackerel, No. 1	.2100	.2100
	Mackerel, No. 2	.1500	.1517
Fall River	Cod, whole	.0800	.0800
	Mackerel, No. 1	.1500	.1517
Lynn	Cod, boneless	.1400	.1450
	Cod, boneless	.1400	.1492
Malden	Cod, boneless	.1500	.1500
	Cod, whole	.0800	.0800
	Cod, whole	.0800	.0933
Worcester	Cod, whole	.1000	.1000
	Mackerel, No. 2	.1500	.1500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FISH, SALT, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MICHIGAN.			
Detroit	Cod, boneless	$0.1500	$0.1500
	Mackerel, No. 2	.1500	.1500
Grand Rapids	Mackerel, No. 1	.2000	.1933
	Mackerel, No. 1	.1825	.2000
MINNESOTA.			
Duluth	Cod, 1-pound packages	.1250	.1313
	Mackerel, No. 1	.1917	.2067
Minneapolis	Cod, boneless	.1250	.1250
	Mackerel, No. 2	.1163	.1675
St. Paul	Cod	.1000	.1000
	Cod, Lion or White Rose	.1000	.1000
MISSOURI.			
Kansas City	Mackerel, No. 1	.1500	.1500
	Mackerel, No. 2	.1313	.1392
St. Louis	Cod, bricks	.1000	.1000
	Mackerel, No. 1	.1000	.1000
	Mackerel, No. 2	.1083	.1100
MONTANA.			
Butte	Mackerel, No. 3	.1583	.2000
NEBRASKA.			
Omaha	Mackerel, No. 1	.1417	.1438
	Mackerel, No. 1	.1417	.1500
NEW HAMPSHIRE.			
Manchester	Cod, boneless	.1483	.1425
	Cod, whole	.1000	.1025
NEW JERSEY.			
Jersey City	Cod	.1275	.1533
	Cod, George's, whole	.1400	.1400
Trenton	Cod, boneless	.1250	.1300
	Cod, bricks	.1000	.1000
NEW YORK.			
Albany	Cod	.1100	.1267
	Cod, 1-pound bricks	.1000	.1000
Buffalo	Cod, Perfection, 1-pound bricks	.0800	.1000
	Cod, Puritan	.1200	.1200
New York (Brooklyn)	Cod, 1-pound bricks	.1325	.1400
	Cod, whole	.1375	.1500
	Mackerel, No. 2	.1500	.1500
New York (Manhattan)	Cod, boneless, 1-pound bricks	.1200	.1200
	Cod, boneless, 1-pound bricks	.1500	.1500
	Cod, Ocean Gem, 1-pound bricks	.0933	.0900
	Cod, whole	.1400	.1400
	Mackerel, No. 1	.2000	.2000
	Mackerel, No. 2	.1500	.1500
	Salmon, Red Alaska	.1200	.1200
Rochester	Cod, 1-pound bricks	.1400	.1400
	Mackerel, No. 2	.1500	.1500
Syracuse	Mackerel, No. 1	.1633	.1800
	Mackerel, No. 1	.2583	.3500
OHIO.			
Cincinnati	Cod, headless, whole	.1000	.1000
	Mackerel, No. 2	.1500	.1500
	Mackerel, No. 2	.1500	.1500
Cleveland	Cod	.1500	.1600
	Cod	.1200	.1200
	Mackerel, No. 2	.1333	.1533
Toledo	Mackerel, No. 1	.3000	.3000
	Mackerel, No. 1	.3000	.3000
OREGON.			
Portland	Mackerel, No. 2	.1500	.1500
	Mackerel, No. 2	.1500	.1500
	Mackerel, No. 2	.1500	.1500
PENNSYLVANIA.			
Philadelphia	Cod	.1000	.1000
	Cod, boneless	.0900	.0900
	Mackerel, No. 1	.2000	.2000
	Mackerel, No. 2	.1600	.2000
Pittsburg (Allegheny)	Mackerel, No. 2	.1500	.1500
	Mackerel, No. 2	.2000	.2000
Pittsburg (Pittsburg)	Cod	.1000	.1000
	Mackerel, No. 2	.1500	.1500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FISH, SALT, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
PENNSYLVANIA—concluded.			
Scranton	Cod	$0.1200	$0.1200
	Cod	.1250	.1250
Wilkes-Barre	Cod	.1500	.1500
	Mackerel, No. 1	.1800	.1900
RHODE ISLAND.			
Providence	Cod	.0883	.0900
	Cod, boneless, in boxes	.1500	.1500
SOUTH CAROLINA.			
Charleston	Cod	.0800	.0917
	Mackerel, No. 1	.1483	.1617
SOUTH DAKOTA.			
Sioux Falls	Mackerel, No. 2	.1500	.1500
	Mackerel, No. 2	.1500	.1500
TENNESSEE.			
Memphis	Mackerel, No. 1	.1500	.1500
	Mackerel, No. 1	.1000	.1000
Nashville	Mackerel, No. 1	.1000	.1000
	Mackerel, No. 1	.1250	.1250
TEXAS.			
Dallas	Cod, boneless	.1250	.1375
	Mackerel, No. 1	.1500	.1500
San Antonio	Cod, boneless	.1000	.1083
	Mackerel, No. 1	.1500	.1500
UTAH.			
Salt Lake City	Mackerel, No. 2	.1750	.1750
	Mackerel, No. 3	.2500	.3000
VIRGINIA.			
Norfolk	Mackerel, No. 2	.1333	.1483
	Mackerel, No. 2	.1250	.1250
Richmond	Cod	.0692	.0783
	Mackerel, No. 2	.1250	.1292
WASHINGTON.			
Seattle	Mackerel, No. 1	.1500	.1500
	Mackerel, No. 3	.1500	.1500
Tacoma	Mackerel, No. 1	.2500	.3000
	Mackerel, No. 1	.2500	.2500
WEST VIRGINIA.			
Wheeling	Mackerel, No. 2	.1000	.1050
	Mackerel, No. 2	.1300	.1500
WISCONSIN.			
Milwaukee	Cod, headless	.1050	.1050
	Cod, headless	.0900	.0900

FLOUR, WHEAT, PER ONE-EIGHTH BARREL BAG.

ALABAMA.			
Birmingham	Champion	$0.8292	$0.8625
	Pillsbury's Best	.9000	.9125
	Roller, Champion	.8833	.9000
Montgomery	Ballard's Obelisk	.6500	.7625
	Dictator	.7500	.7500
	Omega	.8000	.8250
ARKANSAS.			
Little Rock	Angel Food	.7583	.7792
	Success	.7125	.8042
	Superior	.7667	.8375
CALIFORNIA.			
Los Angeles	Capital	.7500	.8250
	Capital	.7500	.7667
	Capital	.7500	.7667
San Francisco	Golden Gate or Sperry's Roller	.6583	.8042
	Sperry's Family	.6625	.7833
	Sperry's Roller	.6583	.8042
	Sperry's Roller	.7000	.8333
COLORADO.			
Denver	Hungarian	.6500	.6890
	Pride of the West	.5083	.6792

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FLOUR, WHEAT, PER ONE-EIGHTH BARREL BAG—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
CONNECTICUT.			
New Haven	Haxall's	$0.8250	$0.9000
	Pillsbury's Best	.6875	.8125
	Washburn's	.7625	.8667
DELAWARE.			
Wilmington	Gold Medal	.7250	.8042
	Pillsbury's Best	.7500	.8125
	Pillsbury's Best	.7500	.7917
DISTRICT OF COLUMBIA.			
Washington	Ceres	.8958	.8875
	Gold Medal	.9000	.8917
	Gold Medal	.8625	.8958
	Hecker's	.8167	.8625
FLORIDA.			
Jacksonville	De Soto	.7500	.7500
	De Soto	.8083	.8250
	Majestic	.8208	.9000
GEORGIA.			
Atlanta	Elegant	.9042	.9667
	Golden Harvest	.7000	.7375
	Kemper's Best Pastry	.8500	.8583
ILLINOIS.			
Chicago	Pillsbury's Best	.6025	.7275
	Pillsbury's Best	.6400	.7542
	Pillsbury's Best	.6208	.8042
	Pillsbury's Best	.6292	.7042
	Pillsbury's Best	.6358	.7117
	Pillsbury's Best	.7083	.7750
Peoria	Pillsbury's Best	.7333	.8375
	Vienna	.7375	.7500
	Vienna	.7292	.6875
INDIANA.			
Indianapolis	Diadem	.7625	.7708
	Diadem	.7458	.7500
	Pride of Indiana	.6042	.6583
Terre Haute	Gold Medal	.7892	.8167
	Gold Medal	.8333	.8208
	Kidder Mills	.6558	.6250
IOWA.			
Des Moines	John Alden	.8000	.8417
	Pillsbury's Best	.7625	.8208
	Pillsbury's Best	.7000	.7792
Dubuque	Pillsbury's Best	.6542	.7583
	Pillsbury's Best	.6792	.7417
	White Diamond	.6000	.7250
KANSAS.			
Topeka	White Loaf	.6250	.7250
	White Loaf	.6083	.6792
	White Loaf	.6375	.7167
KENTUCKY.			
Louisville	Acme	.6708	.7042
	Pillsbury's Best	.7750	.8000
	White Plume	.7583	.7667
LOUISIANA.			
New Orleans	Angel's Food	.6708	.7875
	Angel's Food	.7500	.7500
	Obelisk	.7708	.7792
	Obelisk	.8625	.8792
MAINE.			
Portland	Juno	.7750	.8375
	Pillsbury's Best	.7583	.8875
	Pillsbury's Best	.7750	.8375
MARYLAND.			
Baltimore	Gold Medal	.7067	.8017
	Gold Medal	.7167	.8208
	Pillsbury's Best	.7067	.8125
	Superlative Patapsco	.6700	.7400
MASSACHUSETTS.			
Boston	Golden Gate	.6575	.7292
	Golden Rose	.6367	.7583
	Pillsbury's Best	.7583	.8292
	Smith's	.7083	.7567

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FLOUR, WHEAT, PER ONE-EIGHTH BARREL BAG—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MASSACHUSETTS—concluded.			
Fall River	Benton's Best	$0.7175	$0.7550
	King Arthur	.8208	.9250
	Pillsbury's Best	.7667	.8092
Lynn	Haxall's Cream Loaf	.6717	.6842
	Pillsbury's Best	.7500	.8458
	Pillsbury's Best	.7667	.8500
Malden	Golden Gate	.6433	.7492
	Haxall's	.7500	.8458
	Highland Beauty	.7542	.8417
Worcester	Gold Medal	.8000	.8792
	Napoleon	.8292	.9625
	Pillsbury's Best	.7542	.8542
MICHIGAN.			
Detroit	Gold Medal	.6733	.7958
	Henkel's Commercial	.5425	.6283
	Stott's or Henkel's	.5383	.6125
Grand Rapids	Crescent or Lily White	.7583	.7292
	Lily White	.6583	.7292
	Lily White	.6375	.7292
MINNESOTA.			
Duluth	Pillsbury's Best	.7292	.8500
	Pillsbury's Best	.6208	.7208
	Universal	.6250	.7667
Minneapolis	Minnesota	.6333	.7042
	Minnesota	.6625	.7333
	Pillsbury's Best	.6375	.7250
St. Paul	Apple Blossom	.6442	.7292
	Pillsbury's Best	.6125	.7708
	Pillsbury's Best	.6417	.7283
MISSOURI.			
Kansas City	Kelly's Best	.5667	.6375
	Queen of the Pantry	.6500	.7750
	Whyte's Best Family	.6000	.6417
St. Louis	Royal	.6000	.6625
	Royal Patent	.7375	.7375
	Royal Patent	.5958	.6167
	Standard	.6208	.6417
MONTANA.			
Butte	Lutana	.8833	.9000
	White Spray	.9000	.9625
	Youlden's Best	.9000	.9583
NEBRASKA.			
Omaha	Puritan	.6250	.7375
	Puritan	.6292	.6583
	Puritan	.6292	.6500
NEW HAMPSHIRE.			
Manchester	Patent	.7583	.8375
	Pillsbury's Best	.7792	.8542
	Red A	.6417	.7250
NEW JERSEY.			
Jersey City	Gold Medal	.7058	.7250
	Hecker's	.8700	.8500
	Hecker's	.8000	.8500
Trenton	Cream of Wheat	.8125	.8208
	Pillsbury's Best	.7750	.8250
	Pillsbury's Best	.8250	.8667
NEW YORK.			
Albany	Pillsbury's Best	.6500	.7542
	Pillsbury's Best	.7250	.8208
	Pillsbury's Best	.8000	.8167
Buffalo	Ceresota	.6500	.7000
	Thornton and Chester's	.6400	.7600
	Thornton and Chester's Patent	.6900	.7375
New York (Brooklyn)	Crusade	.7500	.8083
	Hecker's	.7500	.8708
	Hecker's Patent	.7075	.7167
	Pillsbury's Best	.7450	.8833
	Pillsbury's Best	.7500	.8292
New York (Manhattan)	Head of the List	.9833	.9583
	Hecker's	.7500	.7925
	Hecker's	.7542	.8458
	Hecker's Superlative	.7250	.8292
	Hecker's Superlative	.7400	.7667
	Pillsbury's Best	.7500	.8333

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FLOUR, WHEAT, PER ONE-EIGHTH BARREL BAG—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW YORK—concluded.			
Rochester	Big B	$0.6792	$0.7458
	Splendor	.6892	.6658
	Yosemite	.6992	.7417
Syracuse	Amos or Big Jo	.7583	.8533
	Daisy	.7000	.7500
	Sleepy Eye	.7342	.7758
OHIO.			
Cincinnati	Banner	.7042	.7292
	Gold Medal	.7500	.7625
	Pillsbury's Best	.7600	.7708
	Pillsbury's Best	.7125	.7500
Cleveland	Ceresota	.6892	.8133
	National	.6167	.7500
	Prospect	.5792	.6583
	Southworth's AA	.6033	.6208
Toledo	Peerless or Pansy	.6792	.7167
	Pansy	.6500	.7375
	Snowball	.6242	.6667
OREGON.			
Portland	Olympia	.6000	.6375
	Oregon	.6500	.7250
	Oregon	.7000	.7333
PENNSYLVANIA.			
Philadelphia	Gold Medal	.6908	.8025
	Gold Medal	7500	.7458
	Hecker's Highland Chief	8000	.8458
	Quaker City	.7000	.8342
	Minnesota	.7750	.8017
Pittsburg (Allegheny)	Minnehaha	.6500	.7500
	Minnehaha	.7083	.7833
	Minnehaha	.6500	.8183
Pittsburg (Pittsburg)	Minnehaha	.7000	.7833
	Pillsbury's Best	.7542	.7958
	Vienna	.7167	.8367
Scranton	Coursen's Gem	.7625	.7833
	Pillsbury's Best	.8042	.9000
	Silver Leaf	.7625	.8083
Wilkes-Barre	King Midas	.8833	.9333
	Meixell Bros	.7375	.8250
	Pillsbury's Best	.7000	.8375
RHODE ISLAND.			
Providence	Haxall's	.7750	.8750
	Haxall's Best	.8500	.9500
	Haxall's Best	.8375	.9167
SOUTH CAROLINA.			
Charleston	Harters, No. 1	.7875	.8000
	Obelisk	.7250	.7458
	Roxana	.7292	.7833
SOUTH DAKOTA.			
Sioux Falls	Big Chief	.6000	.7000
	Local manufacture	.5933	.6000
	Local manufacture	.5883	.6000
TENNESSEE.			
Memphis	Belle of Ava	.7583	.7500
	Belle of Ava	.6792	.7542
	Omega	.8292	.8750
Nashville	Alister	.6500	.7500
	Daisy	.6833	.7792
	Flora	.6333	.6583
TEXAS.			
Dallas	Blue Bonnet	.6417	.6708
	Blue Bonnet	.6500	.7125
	Blue Bonnet	.6500	.6875
San Antonio	Pioneer	.6375	.6833
	Pioneer	.5625	.6833
	Pioneer	.6583	.7167
UTAH.			
Salt Lake City	High Patent	.6458	.7042
	High Patent	.7208	.7333
	High Patent	.7500	.7500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

FLOUR, WHEAT, PER ONE-EIGHTH BARREL BAG—Concluded.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
VIRGINIA.			
Norfolk	Henry Clay, sold by the $\frac{1}{16}$-barrel bag	$0.7150	$0.7500
	Obelisk, sold by the $\frac{1}{16}$-barrel bag	.7000	.7567
	Obelisk sold by the $\frac{1}{16}$-barrel bag	.7583	.7600
Richmond	Dunlop's Patent	.6700	.7217
	Motley's Selling Bell	.6792	.7542
	Obelisk	.6708	.7125
WASHINGTON.			
Seattle	Centennial, sold by the $\frac{1}{8}$-barrel bag	.6125	.6917
	Centennial, sold by the $\frac{1}{4}$-barrel bag	.6042	.6958
	Split Silk	.6000	.6708
Tacoma	Olympic	.7000	.7625
	Olympic	.6500	.7250
	Olympic, sold by the $\frac{1}{4}$-barrel bag	.6292	.7000
WEST VIRGINIA.			
Wheeling	Ceresota	.6792	.7917
	Ceresota	.6583	.7583
	Standard	.5842	.6458
WISCONSIN.			
Milwaukee	Big Jo	.6300	.7033
	Daisy	.6500	.7533
	Snowflake	.6583	.7500

LARD, PER POUND.

ALABAMA.			
Birmingham	Pure leaf, bulk	$0.1367	$0.1500
	Pure leaf, bulk	.1250	.1250
Montgomery	Leaf, bulk	.1196	.1275
	Pure leaf, bulk	.1000	.1000
ARKANSAS.			
Little Rock	Pure leaf, bulk	.1250	.1292
	Pure leaf, bulk	.1250	.1250
CALIFORNIA.			
Los Angeles	Pure leaf, bulk	.1500	.1575
	Pure leaf, bulk	.1375	.1500
San Francisco	Pure leaf, bulk	.1083	.1100
	Pure leaf, bulk	.1250	.1458
	Pure leaf, bulk	.1250	.1250
	Pure, Swift's, sold in 3-pound cans	.1500	.1500
COLORADO.			
Denver	Pure leaf, sold in 10-pound cans	.1250	.1250
	Pure leaf, sold in 10-pound cans	.1250	.1250
CONNECTICUT.			
New Haven	Pure leaf, bulk	.1350	.1400
	Pure leaf, sold in 3-pound cans	.1500	.1575
DELAWARE.			
Wilmington	Leaf, bulk	.1217	.1250
	Pure leaf, bulk	.1200	.1292
DISTRICT OF COLUMBIA.			
Washington	Pure leaf, bulk	.1100	.1400
	Pure leaf, bulk	.1183	.1292
	Pure leaf, bulk	.1192	.1367
	Pure leaf, bulk	.1292	.1400
FLORIDA.			
Jacksonville	Pure leaf, bulk	.1300	.1300
	Pure leaf, bulk	.1333	.1383
	Pure leaf, bulk	.1263	.1250
GEORGIA.			
Atlanta	Pure leaf, bulk	.1250	.1250
	Pure leaf, bulk	.1250	.1250
ILLINOIS.			
Chicago	Pure, bulk	.1313	.1233
	Leaf, bulk	.0917	.1050
	Pure leaf, bulk	.1008	.1058
	Pure leaf, bulk	.1083	.0956
	Pure leaf, bulk	.1142	.1242
	Pure leaf, bulk	.1333	.1267
Peoria	Pure leaf, bulk	.1288	.1250
	Pure leaf, bulk	.1333	.1438

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

LARD, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
INDIANA.			
Indianapolis	Leaf, bulk	$0.1250	$0.1350
	Leaf, bulk	.1000	.1229
Terre Haute	Pure, bulk	.1300	.1417
	Pure leaf, bulk	.1450	.1450
IOWA.			
Des Moines	Pure leaf, bulk	.1313	.1500
	Pure leaf, bulk	.1167	.1250
Dubuque	Leaf, bulk	.1188	.1333
	Pure leaf, bulk	.1213	.1450
KANSAS.			
Topeka	Pure leaf, bulk	.1458	.1200
	Pure leaf, bulk	1408	.1500
KENTUCKY.			
Louisville	Pure leaf, bulk	.1250	.1250
	Pure leaf, sold in 1-pound cans	.1600	.1692
LOUISIANA.			
New Orleans	Pure leaf, bulk	.1100	.1250
	Pure leaf, sold in 5-pound cans	.1100	.1225
	Swift's silver leaf, bulk	.1117	.1275
MAINE.			
Portland	Leaf, sold in 3, 5, and 10 pound cans	.1321	.1500
	Pure leaf, sold in 3, 5, and 10 pound cans	.1350	.1500
MARYLAND.			
Baltimore	Pure, bulk	.1083	.1196
	Pure, bulk	.1133	.1200
	Pure, bulk	.1167	.1192
	Pure, bulk	.1158	.1283
MASSACHUSETTS.			
Boston	Pure leaf, bulk	.1250	.1325
	Pure leaf, sold in 3-pound cans	.1208	.1336
	Pure leaf, sold in 3-pound cans	.1142	.1245
Fall River	Pure leaf, bulk	.1100	.1083
	Pure leaf, bulk	.1133	.1125
Lynn	Pure leaf, bulk	.1050	.1142
	Pure leaf, bulk	.1175	.1258
Malden	Pure leaf, bulk	.1183	.1250
	Pure leaf, sold in 3-pound cans	.1158	.1170
Worcester	Pure leaf, bulk	.1325	.1367
	Pure leaf, bulk	.1425	.1425
MICHIGAN.			
Detroit	Pure leaf, bulk	.1196	.1292
	Pure leaf, bulk	.1317	.1400
Grand Rapids	Pure, bulk	.1300	.1300
	Pure, bulk	.1250	.1250
	Pure leaf, kettle rendered, bulk	.1233	.1500
	Pure leaf, kettle rendered, bulk	.1250	.1250
MINNESOTA.			
Duluth	Pure, bulk	.1250	.1250
	Pure, bulk	.1142	.1250
Minneapolis	Pure, bulk	.1200	.1225
	Pure, bulk	.1250	.1250
	Pure leaf, bulk	.1250	.1250
	Pure leaf, bulk	.1250	.1250
St. Paul	Pure, bulk	.1292	.1367
	Pure, bulk	.1250	.1292
MISSOURI.			
Kansas City	Pure leaf, bulk	.1417	.1333
	Pure leaf, bulk	.1208	.1250
St. Louis	Pure leaf, bulk	.1167	.1188
	Pure leaf, bulk	.1125	.1229
	Pure leaf, bulk	.1083	.1138
MONTANA.			
Butte	Pure, sold in 5-pound cans	.1183	.1425
	Pure, Swift's, sold in 5-pound cans	.1367	.1383
NEBRASKA.			
Omaha	Pure leaf, bulk	.1146	.1250
	Pure leaf, bulk	.1167	.1213
NEW HAMPSHIRE.			
Manchester	Pure leaf, sold in 5-pound cans	.1367	.1492
	Pure leaf, sold in 5 and 10 pound cans	.1313	.1438

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

LARD, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW JERSEY.			
Jersey City	Pure leaf, bulk	$0.1100	$0.1208
	Pure leaf, bulk	.1092	.1133
Trenton	Pure leaf, bulk	.1300	.1300
	Pure leaf, bulk	.1300	.1400
NEW YORK.			
Albany	Pure leaf, bulk	.1433	.1433
	Pure leaf, sold in 3 and 5 pound cans	.1400	.1408
Buffalo	Pure, bulk	.1033	.1000
	Pure, bulk	.1183	.1192
	Pure, bulk	.1158	.1300
	Pure, bulk	.1125	.1225
New York (Brooklyn)	Pure leaf, bulk	.1300	.1400
	Pure leaf, bulk	.1483	.1475
	Pure leaf, bulk	.1383	.1500
	Pure leaf, bulk	.1213	.1400
New York (Manhattan)	Pure leaf, bulk	.1288	.1400
	Pure leaf, bulk	.1258	.1467
	Pure leaf, bulk	.1500	.1500
	Pure leaf, bulk	.1500	.1500
	Pure leaf, sold in 3-pound cans	.1325	.1458
	Pure leaf, sold in 5-pound cans	.1500	.1500
Rochester	Bulk	.1225	.1283
	Pure, bulk	.0967	.1050
	Pure, bulk	.1150	.1000
	Pure, bulk	.1233	.1333
Syracuse	Pure, bulk	.1258	.1317
	Pure, bulk	.1233	.1367
OHIO.			
Cincinnati	Pure, bulk	.1129	.1175
	Pure, bulk	.1250	.1188
	Pure, bulk	.1100	.1200
Cleveland	Pure leaf, bulk	.1167	.1325
	Pure leaf, bulk	.1133	.1267
	Pure leaf, sold in 3-pound cans	.1436	.1567
	Pure leaf, sold in 3-pound cans	.1217	.1467
	Pure, Swift's Silver Leaf, bulk	.1083	.1108
Toledo	Pure, bulk	.1200	.1200
	Pure, bulk	.1250	.1250
OREGON.			
Portland	Pure leaf, bulk	.1104	.1250
	Pure leaf, bulk	.1250	.1250
PENNSYLVANIA.			
Philadelphia	Pure leaf, bulk	.1292	.1275
	Pure leaf, bulk	.1283	.1400
	Pure leaf, bulk	.1167	.1242
	Pure leaf, bulk	.1225	.1267
	Pure leaf, sold in 3 and 5 pound cans	.1350	.1400
Pittsburg (Allegheny)	Leaf, bulk	.1275	.1342
	Pure leaf, bulk	.1333	.1417
Pittsburg (Pittsburg)	Pure, bulk	.1500	.1500
	Pure, bulk	.1325	.1400
Scranton	Leaf, bulk	.1258	.1263
	Pure leaf, bulk	.1200	.1200
Wilkes-Barre	Pure leaf, bulk	.1342	.1383
	Pure leaf, sold in 5-pound cans	.1500	.1500
RHODE ISLAND.			
Providence	Pure leaf, bulk	.1300	.1300
	Pure leaf, bulk	.1208	.1258
	Pure leaf, bulk	.1500	.1500
SOUTH CAROLINA.			
Charleston	Pure, bulk	.1108	.1300
	Pure, bulk	.1158	.1200
SOUTH DAKOTA.			
Sioux Falls	Pure leaf, bulk	.1271	.1354
	Pure leaf, bulk	.1333	.1417
TENNESSEE.			
Memphis	Pure leaf, bulk	.1100	.1250
	Pure leaf, sold in 5-pound cans	.1083	.1258
Nashville	Pure leaf, bulk	.1117	.1200
	Pure leaf, bulk	.1458	.1500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

LARD, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	1907.
TEXAS.			
Dallas	Pure leaf, bulk	$0.1250	$0.1250
	Pure leaf, bulk	.1250	.1250
San Antonio	Pure leaf, bulk	.1458	.1500
	Pure leaf, bulk	.1250	.1250
UTAH.			
Salt Lake City	Pure leaf, bulk	.1750	.1500
	Pure leaf, sold in 5-pound cans	.1500	.1500
VIRGINIA.			
Norfolk	Pure, bulk	.1208	.1296
	Pure, bulk	.1250	.1242
Richmond	Leaf, bulk	.1150	.1250
	Pure, bulk	.1179	.1392
	Pure, bulk	.1204	.1204
WASHINGTON.			
Seattle	Pure leaf, sold in 3, 5, and 10 pound cans	.1300	.1300
	Pure leaf, sold in 3, 5, 10, and 20 pound cans	.1250	.1300
	Pure leaf, sold in 5-pound cans	.1300	.1350
	Pure leaf, sold in 5-pound cans	.1363	.1500
Tacoma	Pure leaf, sold in 3-pound cans	.1333	.1333
	Pure leaf, sold in 5-pound cans	.1400	.1000
WEST VIRGINIA.			
Wheeling	Pure, bulk	.1258	.1342
	Pure leaf, sold in 5 and 10 pounds cans	.1175	.1400
WISCONSIN.			
Milwaukee	Pure, bulk	.1217	.1217
	Pure, bulk	.1300	.1067
	Pure, bulk	.1100	.1200

MILK, FRESH, UNSKIMMED, PER QUART.

ALABAMA.			
Birmingham	Delivered, bottled or measured from cans	$0.0800	$0.0800
	Delivered, bottled or measured from cans	.0800	.0867
	Delivered, bottled, sold by ticket Jan., 1906, to Aug., 1907.	.0833	.0889
Montgomery	Delivered, bottled	.0738	.1000
	Delivered, bottled, sold by the pint by ticket.	.0729	.0986
	Delivered, bottled, sold by the pint by ticket.	.0729	.1000
ARKANSAS.			
Little Rock	Delivered, bottled or measured from cans, sold by ticket.	.0833	.0875
	Delivered, measured from cans, sold by ticket.	.0783	.0783
	Delivered, measured from cans, sold by ticket.	.0714	.0714
CALIFORNIA.			
Los Angeles	Delivered, bottled	.0850	.0942
	Delivered, bottled	.0850	.0942
	Delivered, bottled or measured from cans	.0850	.0942
San Francisco	Delivered, bottled or measured from cans, 1 quart daily, $2.50 per calendar month, Jan. to Oct., 1906; $3 per calendar month, Nov, 1906, to Dec., 1907.	.0849	.0986
	Delivered, bottled or measured from cans, 1 quart daily, $2.50 per calendar month, Jan. to Oct., 1906; $3 per calendar month, Nov., 1906, to Dec., 1907.	.0849	.0986
	Delivered, bottled or measured from cans, 1 quart daily, $2.50 per calendar month, Jan. to Oct., 1906; $3 per calendar month, Nov., 1906, to Dec., 1907.	.0849	.0986
	Delivered, bottled or measured from cans, 1 quart daily, $2.50 per calendar month, Jan. to Oct., 1906; $3 per calendar month, Nov., 1906, to Dec., 1907.	.0849	.0986
COLORADO.			
Denver	Delivered, bottled	.0714	.0833
	Delivered, bottled	.0640	.0714
	Delivered, bottled or measured from cans	.0714	.0714

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MILK, FRESH, UNSKIMMED, PER QUART—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
CONNECTICUT.			
New Haven	Delivered, bottled	$0.0650	$0.0700
	Delivered, bottled	.0650	.0717
	Delivered, bottled	.0650	.0733
DELAWARE.			
Wilmington	Delivered, bottled	.0733	.0800
	Delivered, bottled	.0717	.0800
	Delivered, bottled	.0800	.0800
DISTRICT OF COLUMBIA.			
Washington	Delivered, bottled	.0800	.0817
	Delivered, bottled	.0800	.0817
	Delivered, bottled	.0800	.0817
	Delivered, bottled	.0800	.0817
FLORIDA.			
Jacksonville	Delivered, bottled	.1000	.1063
	Delivered, bottled	.1000	.1063
	Delivered, bottled	.1000	.1063
	Delivered, bottled, sold by the ticket	.0909	.1000
GEORGIA.			
Atlanta	Delivered, bottled	.0833	.0972
	Delivered, bottled	.0833	.0930
	Delivered, bottled	.0833	.0986
ILLINOIS.			
Chicago	Delivered, bottled	.0717	.0800
	Delivered, bottled	.0700	.0708
	Delivered, bottled	.0608	.0700
	Delivered, measured from cans	.0700	.0708
Peoria	Delivered, bottled	.0556	.0625
	Delivered, bottled, sold by the ticket	.0556	.0625
	Delivered, bottled, sold by the ticket	.0625	.0700
INDIANA.			
Indianapolis	Delivered, bottled	.0600	.0700
	Delivered, bottled	.0600	.0700
	Delivered, bottled, sold by ticket	.0556	.0714
Terre Haute	Delivered, bottled	.0625	.0733
	Delivered, bottled	.0625	.0725
	Delivered, bottled	.0625	.0700
IOWA.			
Des Moines	Delivered, bottled	.0573	.0596
	Delivered, bottled	.0583	.0583
	Delivered, bottled	.0573	.0585
Dubuque	Delivered, bottled	.0567	.0558
	Delivered, bottled	.0567	.0558
	Delivered, measured from cans	.0550	.0575
KANSAS.			
Topeka	Delivered, bottled, sold by ticket	.0602	.0625
	Delivered, bottled, sold by ticket in 1907	.0550	.0625
	Delivered, bottled, sold by ticket in 1907	.0600	.0625
KENTUCKY.			
Louisville	Delivered, bottled	.0767	.0800
	Delivered, bottled, sold by ticket, Jan. to June, 1906.	.0775	.0800
	Delivered, bottled, sold by ticket, Jan. to Aug., 1906.	.0767	.0800
LOUISIANA.			
New Orleans	Delivered, bottled	.0750	.1000
	Delivered, bottled	.0750	.0813
	Delivered, bottled	.0750	.0792
MAINE.			
Portland	Delivered, bottled	.0700	.0700
	Delivered, bottled	.0700	.0700
	Delivered, bottled	.0625	.0700
MARYLAND.			
Baltimore	Delivered, bottled	.0800	.0825
	Delivered, bottled	.0850	.0863
	Delivered, bottled	.0800	.0817
	Delivered, measured from cans	.0800	.0800
	Delivered, measured from cans	.0700	.0733
	Delivered, measured from cans	.0800	.0800
MASSACHUSETTS.			
·on	Delivered, bottled	.0800	.0850
	Delivered, bottled	.0750	.0900
	Delivered, bottled	.0750	.0825
	Delivered, bottled	.0725	.0825

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MILK, FRESH, UNSKIMMED, PER QUART—Continued.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
MASSACHUSETTS—concluuded.			
Fall River	Delivered, bottled	$0.0650	$0.0750
	Delivered, bottled	.0658	.0758
	Delivered, bottled	.0667	.0733
Lynn	Delivered, bottled	.0700	.0792
Malden	Delivered, bottled	.0725	.0750
	Delivered, bottled	.0725	.0750
	Delivered, bottled	.0725	.0750
Worcester	Delivered, bottled	.0600	.0625
	Delivered, bottled	.0600	.0625
	Delivered, measured from cans	.0600	.0625
MICHIGAN.			
Detroit	Delivered, bottled	.0600	.0633
	Delivered, bottled	.0650	.0658
	Delivered, bottled	.0650	.0650
Grand Rapids	Delivered, bottled	.0600	.0633
	Delivered, bottled	.0600	.0600
	Delivered, bottled	.0600	.0633
MINNESOTA.			
Duluth	Delivered, bottled	.0642	.0742
	Delivered, measured from cans, sold by ticket.	.0635	.0697
	Delivered, measured from cans, sold by ticket.	.0596	.0647
Minneapolis	Delivered, bottled	.0600	.0633
	Delivered, bottled	.0567	.0633
	Delivered, bottled	.0567	.0633
St. Paul	Delivered, bottled; 18 quarts for $1, Jan. to Mar. and Oct. to Dec., 1906, and Apr. to Sept., 1907; 20 quarts for $1, Apr. to Sept., 1906; 17 quarts for $1, Jan. to Mar., 1907; 15 quarts for $1, Oct. to Dec., 1907.	.0528	.0592
	Delivered, measured from cans	.0558	.0625
	Delivered, measured from cans, sold by ticket.	.0509	.0568
MISSOURI.			
Kansas City	Delivered, bottled; 17 quarts for $1, Jan. to Sept., 1906; 13 quarts for $1, Oct., 1906, to Dec., 1907.	.0633	.0769
	Delivered, bottled; 17 quarts for $1, Jan. to Oct., 1906; 14 quarts for $1, Nov., 1906, to Dec., 1907.	.0609	.0714
St. Louis	Delivered, bottled or measured from cans, sold by ticket.	.0714	.0714
	Delivered, bottled or measured from cans, sold by ticket.	.0714	.0714
	Delivered, bottled or measured from cans, sold by ticket except Oct. to Dec., 1906.	.0736	.0714
	Delivered, measured from cans	.0800	.0800
MONTANA.			
Butte	Delivered, bottled, 1 quart daily, $2.50 per calendar month, 1906; $3 per calendar month, 1907.	.0822	.0986
	Delivered, bottled, Jan., 1906, to Sept., 1907; measured from cans, Oct. to Dec. 1907; 1 quart daily, $2.50 per calendar month.	.0822	.0822
	Delivered, bottled, 1906; measured from cans, 1907; 1 quart daily, $2.50 per calendar month.	.0822	.0822
NEBRASKA.			
Omaha	Delivered, bottled	.0600	.0633
	Delivered, bottled	.0500	.0642
	Delivered, bottled or measured from cans.	.0600	.0667
NEW HAMPSHIRE.			
Manchester	Delivered, bottled	.0700	.0700
	Delivered, bottled	.0700	.0700
	Delivered, measured from cans	.0600	.0658
NEW JERSEY.			
Jersey City	Delivered, bottled	.0700	.0800
	Delivered, bottled	.0800	.0800
	Delivered, bottled	.0800	.0800
Trenton	Delivered, bottled	.0800	.0808
	Delivered, bottled	.0800	.0808
	Delivered, bottled	.0800	.0808

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MILK, FRESH, UNSKIMMED, PER QUART—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW YORK.			
Albany	Delivered, bottled	$0.0600	$0.0633
	Delivered, bottled	.0600	.0633
	Delivered, bottled	.0600	.0633
Buffalo	Delivered, bottled	.0617	.0700
	Delivered, bottled	.0617	.0700
	Delivered, bottled	.0600	.0625
	Delivered, bottled	.0600	.0617
New York (Brooklyn)	Delivered, bottled	.0800	.0817
	Delivered, bottled	.0800	.0817
	Delivered, bottled	.0600	.0800
	Delivered, bottled	.0800	.0800
	Delivered, measured from cans	.0700	.0700
New York (Manhattan)	Delivered, bottled	.0800	.0825
	Delivered, bottled	.0800	.0800
	Delivered, measured from cans	.0600	.0700
	Delivered, measured from cans	.0600	.0700
	Delivered, measured from cans	.0600	.0633
	Delivered, measured from cans	.0550	.0592
Rochester	Delivered, bottled; 16 quarts for $1, Jan. to Sept., 1906; 14½ quarts for $1, Oct., 1906, to Mar., 1907; 14 quarts for $1, Apr. to Sept., 1907; 12½ quarts for $1, Oct. to Dec., 1907.	.0641	.0730
	Delivered, measured from cans; 17 quarts for $1, Jan. to Sept., 1906; 16 quarts for $1, Oct., 1906, to Mar., 1907; 15 quarts for $1, Apr. to Sept., 1907; 14 quarts for $1, Oct. to Dec., 1907.	.0597	.0668
	Delivered, measured from cans, 18 quarts for $1, Jan., 1906, to Mar., 1907; 15 quarts for $1, Apr. to Sept., 1907; 14 quarts for $1, Oct. to Dec., 1907.	.0556	.0651
Syracuse	Delivered, bottled	.0600	.0633
	Delivered, measured from cans	.0600	.0633
	Delivered, measured from cans	.0600	.0650
OHIO.			
Cincinnati	Delivered, bottled	.0600	.0600
	Delivered, bottled	.0600	.0600
	Delivered, bottled	.0600	.0600
Cleveland	Delivered, measured from cans	.0625	.0758
	Delivered, measured from cans, 1906; bottled, 1907.	.0600	.0733
	Delivered, measured from cans, Jan., 1906, to July, 1907; bottled Aug. to Dec., 1907.	.0700	.0742
Toledo	Delivered, bottled	.0600	.0625
	Delivered, bottled	.0800	.0800
	Delivered, measured from cans	.0600	.0625
OREGON.			
Portland	Delivered, bottled or measured from cans, 1 quart daily; $2.25 per calendar month, Jan., 1906, to Aug., 1907; $2.50 per calendar month, Sept. to Dec., 1907.	.0740	.0767
	Delivered, bottled, 1 quart daily, $2.25 per calendar month, Jan., 1906, to Aug., 1907; $2.50 per calendar month, Sept. to Dec., 1907.	.0740	.0767
	Delivered, bottled, 1 quart daily, $2.25 per calendar month, Jan., 1906, to Aug., 1907; $2.50 per calendar month, Sept. to Dec., 1907.	.0740	.0767
PENNSYLVANIA.			
Philadelphia	Delivered, bottled	.0800	.0800
	Delivered, bottled	.0800	.0800
	Delivered, bottled	.0800	.0800
	Delivered, measured from cans	.0800	.0800
	Delivered, measured from cans	.0800	.0800
Pittsburg (Allegheny)	Delivered, measured from cans	.0617	.0717
	Delivered, measured from cans	.0700	.0700
	Delivered, measured from cans	.0700	.0658
Pittsburg (Pittsburg)	Delivered, bottled	.0700	.0675
	Delivered, measured from cans	.0700	.0700
	Delivered, measured from cans	.0742	.0750
Scranton	Delivered, bottled	.0767	.0767
	Delivered, bottled	0758	.0767
	Delivered, bottled	.0758	.0767
Wilkes-Barre	Delivered, bottled	.0800	.0800
	Delivered, bottled	.0800	.0800
	Delivered, bottled	.0800	.0800

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MILK, FRESH, UNSKIMMED, PER QUART—Concluded.

State and locality.	Description.	Average price. 1906.	1907.
RHODE ISLAND.			
Providence	Delivered, bottled	$0.0725	$0.0750
	Delivered, bottled	.0725	.0750
	Delivered, bottled	.0750	.0750
SOUTH CAROLINA.			
Charleston	Delivered, bottled	.0800	.0983
	Delivered, bottled	.0800	.0983
	Delivered, bottled	.0800	.0983
SOUTH DAKOTA.			
Sioux Falls	Delivered, measured from cans	.0558	.0558
	Delivered, measured from cans, sold by ticket.	.0542	.0573
	Delivered, measured from cans, sold by ticket.	.0594	.0583
TENNESSEE.			
Memphis	Delivered, bottled	.0900	.0900
	Delivered, bottled or measured from cans, sold by ticket.	.0833	.0833
	Delivered, bottled, sold by ticket	.0833	.0858
Nashville	Delivered, bottled or measured from cans.	.0708	.0708
	Delivered, bottled or measured from cans.	.0625	.0667
	Delivered, bottled or measured from cans.	.0558	.0592
TEXAS.			
Dallas	Delivered, bottled, 14 quarts for $1, Jan., 1906, to Aug., 1907; 12 quarts for $1, Sept. to Dec., 1907.	.0714	.0754
	Delivered, measured from cans, 16 quarts for $1, Jan., 1906, to Aug., 1907; 14 quarts for $1, Sept. to Dec., 1907.	.0625	.0655
	Delivered, measured from cans, 16 quarts for $1, Jan., 1906, to Feb., 1907; 14 quarts for $1, Mar. to Dec., 1907.	.0625	.0699
San Antonio	Delivered, bottled, 14 quarts for $1, Jan., 1906, to Sept., 1907; 12 quarts for $1, Oct. and Nov., and 10 quarts for $1, Dec., 1907	.0714	.0758
	Delivered, bottled, 14 quarts for $1, Jan., 1906, to May, 1907; 12 quarts for $1, June to Nov., 1907, and 10 quarts for $1, Dec., 1907.	.0714	.0797
	Delivered, bottled, 14 quarts for $1, Jan., 1906, to Aug., 1907; 12 quarts for $1, Sept. to Dec., 1907.	.0714	.0754
UTAH.			
Salt Lake City	Delivered, bottled, sold by ticket	.0640	.0655
	Delivered, measured from cans	.0647	.0714
	Delivered, measured from cans, sold by ticket.	.0640	.0625
VIRGINIA.			
Norfolk	Delivered, bottled	.1000	.1000
	Delivered, measured from cans	.0800	.0833
	Delivered measured from cans	.1000	.1000
Richmond	Delivered, measured from cans	.0817	.0850
	Delivered, measured from cans	.0742	.0850
	Delivered, measured from cans	.0742	.0850
WASHINGTON.			
Seattle	Delivered, bottled, sold by ticket	.0728	.0827
	Delivered, bottled, sold by ticket	.0728	.0828
	Delivered, measured from cans	.0650	.0725
Tacoma	Delivered, bottled, sold by ticket	.0647	.0808
	Delivered measured from cans, sold by ticket.	.0607	.0666
	Delivered, measured from cans, sold by ticket.	.0607	.0666
WEST VIRGINIA.			
Wheeling	Delivered, bottled	.0800	.0800
	Delivered, bottled	.0800	.0833
	Delivered, bottled	.0800	.0800
WISCONSIN.			
Milwaukee	Delivered, bottled, sold by ticket	.0588	.0588
	Delivered, bottled, sold by ticket, 1907	.0533	.0588
	Delivered, bottled, sold by ticket, Jan. to June, 1906.	.0504	.0608
	Delivered, measured from cans, sold by ticket, Oct., 1906, to Dec., 1907.	.0522	.0588

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MOLASSES, PER GALLON.

State and locality.	Description.	Average price.	
		1906.	1907.
ALABAMA.			
Birmingham	New Orleans	$0.7500	$0.7500
	New Orleans	.7500	.8500
Montgomery	Georgia cane	.5000	.5000
	Georgia cane, sold in gallon cans	.6500	.6500
ARKANSAS.			
Little Rock	New Orleans, sugar-house	.6000	.6000
	New Orleans, sugar-house	.6500	.6500
CALIFORNIA.			
Los Angeles	New Orleans	.5000	.5000
	New Orleans	.6000	.6000
San Francisco	New Orleans	.6500	.7167
	New Orleans	.5000	.5000
	New Orleans	.6000	.7125
	New Orleans	.6000	.6000
COLORADO.			
Denver	New Orleans	.5000	.5500
	New Orleans	.7500	.7500
CONNECTICUT.			
New Haven	New Orleans	.5500	.5500
	New Orleans	.5000	.5000
DELAWARE.			
Wilmington	New Orleans, sold by the quart	.6000	.6000
	New Orleans, sold by the quart	.6000	.6000
DISTRICT OF COLUMBIA.			
Washington	New Orleans	.5000	.5000
	New Orleans	.6000	.6000
	New Orleans	.6000	.7100
	New Orleans	.6000	.6000
FLORIDA.			
Jacksonville	Sirup, Florida cane	.5000	.5000
	Sirup, Florida cane	.6333	.7000
	Sirup, Florida cane	.5000	.5167
GEORGIA.			
Atlanta	Georgia cane	.5000	.5500
	Georgia cane, sold in gallon cans	.6750	.7500
	New Orleans	.5000	.5000
ILLINOIS.			
Chicago	New Orleans	.6000	.6000
	New Orleans	.5000	.5167
	New Orleans	.5683	.6000
	New Orleans	.6500	.6500
Peoria	New Orleans	.7000	.7000
	New Orleans	.6000	.6000
INDIANA.			
Indianapolis	New Orleans, sold by the quart	.6000	.6000
	New Orleans, sold by the quart	.6000	.6000
	New Orleans, sold by the quart	.6000	.6000
Terre Haute	New Orleans, sold by the quart	.6000	.6000
	New Orleans, sold in quart cans	.6000	.6000
IOWA.			
Des Moines	New Orleans	.6000	.6000
	New Orleans	.4000	.4000
Dubuque	New Orleans	.6000	.6000
	New Orleans	.5000	.5000
	Sirup, corn	.3500	.4000
KANSAS.			
Topeka	New Orleans	.6000	.6000
KENTUCKY.			
Louisville	New Orleans	.6000	.5625
	New Orleans	.6000	.6125
LOUISIANA.			
New Orleans	New Orleans	.4000	.4000
	New Orleans, open kettle	.6000	.6250
	Plantation	.4000	.4000
MAINE.			
Portland	Porto Rico	.5000	.5000
	Porto Rico	.5000	.5375

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MOLASSES, PER GALLON—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MARYLAND.			
Baltimore	Porto Rico	$0.4500	$0.4500
	New Orleans	.6000	.6000
	New Orleans	.6000	.6000
MASSACHUSETTS.			
Boston	New Orleans	.4000	.4000
	Porto Rico	.5000	.5000
	Porto Rico	.4800	.4800
Fall River	New Orleans	.5000	.5000
	Porto Rico	.4800	.4800
Lynn	New Orleans	.4500	.4500
	Porto Rico	.4000	.4000
Malden	Molasses and sirup, blended	.3700	.3700
	Porto Rico	.5000	.5000
Worcester	New Orleans	.6000	.6000
	Porto Rico	.5000	.5000
MICHIGAN.			
Detroit	New Orleans	.6500	.6500
	New Orleans	.5000	.5000
Grand Rapids	New Orleans	.4000	.4000
	New Orleans	.4500	.4500
	New Orleans, open kettle, sold by the quart.	.6000	.8000
MINNESOTA.			
Duluth	New Orleans	.6000	.6000
	Porto Rico	.4000	.4000
Minneapolis	New Orleans	.4000	.4000
	New Orleans	.4500	.4500
	Porto Rico	.6000	.6000
St. Paul	New Orleans	.4000	.4000
	New Orleans	.4000	.4000
MISSOURI.			
Kansas City	New Orleans	.5000	.5000
	New Orleans	.5000	.5000
St. Louis	New Orleans	.6000	.6000
	New Orleans	.4500	.4500
	New Orleans	.4000	.4000
MONTANA.			
Butte	New Orleans, sold in gallon cans	.6500	.6500
	New Orleans, sold in gallon cans	.6000	.6000
NEBRASKA.			
Omaha	New Orleans	.6000	.6000
	New Orleans, sold in quart cans	.6000	.6000
NEW HAMPSHIRE.			
Manchester	Porto Rico	.5000	.5000
	Porto Rico	.6000	.6000
NEW JERSEY.			
Jersey City	New Orleans, open kettle	.5500	.5500
	New Orleans, open kettle, sold by the quart.	.6000	.6000
Trenton	New Orleans	.6000	.6000
	New Orleans	.6000	.7000
	New Orleans	.6000	.6500
NEW YORK.			
Albany	New Orleans	.5500	.5500
	Porto Rico, sold in quart cans	.4000	.4000
Buffalo	New Orleans	.4000	.4000
	New Orleans	.4000	.4000
	New Orleans, sold by the quart	.4800	.4800
	Porto Rico	.4000	.4000
	Porto Rico, black	.4500	.4500
New York (Brooklyn)	New Orleans	.6500	.6500
	New Orleans, sold by the quart	.5300	.5300
	New Orleans, sold in gallon cans	.5000	.5000
New York (Manhattan)	New Orleans	.6000	.6292
	New Orleans	.5000	.5000
	New Orleans	.6000	.6125
	New Orleans, sold by the quart	.7200	.7200
	New Orleans, sold by the quart	.6000	.6000
Rochester	New Orleans	.5000	.5000
	Porto Rico	.4000	.4000
Syracuse	New Orleans	.6583	.7000
	New Orleans, sold by the quart	.6000	.6000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MOLASSES, PER GALLON—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
OHIO.			
Cincinnati	New Orleans	$0.6000	$0.6000
	New Orleans	.5500	.5500
	New Orleans	.6250	.7500
Cleveland	New Orleans	.4000	.4000
	New Orleans	.5000	.5000
	New Orleans, open kettle	.5000	.5000
	Porto Rico	.4000	.4067
Toledo	New Orleans	.6000	.6000
	New Orleans, open kettle	.5000	.5000
OREGON.			
Portland	New Orleans	.6750	.7500
	New Orleans	.6000	.6000
PENNSYLVANIA.			
Philadelphia	New Orleans	.5000	.5000
	New Orleans	.5000	.5000
	New Orleans	.6500	.6500
	Sirup, sugar, sold by the quart	.4800	.4800
	Sirup, sugar, sold by the quart	.4000	.4533
Pittsburg (Allegheny)	New Orleans, open kettle, sold by the quart.	.5000	.6000
	New Orleans, open kettle, sold by the quart.	.6000	.6000
Pittsburg (Pittsburg)	New Orleans, sold by the quart	.6000	.6000
	New Orleans, sold by the quart	.6000	.6000
Scranton	New Orleans	.7000	.7000
	New Orleans	.5000	.5000
Wilkes-Barre	New Orleans, open kettle	.6000	.6000
RHODE ISLAND.			
Providence	New Orleans	.5000	.5208
	New Orleans	.5000	.5250
	New Orleans	.6000	.6000
SOUTH CAROLINA.			
Charleston	New Orleans	.6000	.6000
	New Orleans	.5000	.5000
SOUTH DAKOTA.			
Sioux Falls	New Orleans	.4500	.5000
	New Orleans	.5000	.5000
TENNESSEE.			
Memphis	Louisiana cane, open kettle, sold in quart cans.	.8000	.8000
	New Orleans and corn, blended, sold in quart cans.	.8000	.8000
	New Orleans, sold by the quart	.6000	.6000
Nashville	New Orleans	.6000	.6000
	New Orleans	.5000	.5833
TEXAS.			
Dallas	Louisiana, cane, sold in gallon cans	.6500	.6500
	New Orleans, sold in gallon cans	.6000	.6500
San Antonio	New Orleans, sold in gallon cans	.6500	.6500
	New Orleans, sold in gallon cans	.5000	.5000
UTAH.			
Salt Lake City	New Orleans	.9000	.9000
	New Orleans, sold in gallon cans	.7500	.8500
	New Orleans, sold in gallon cans	.7500	.7500
VIRGINIA.			
Norfolk	New Orleans	.6000	.6000
	New Orleans	.6000	.6000
Richmond	New Orleans	.6000	.6000
	Porto Rico	.3500	.3667
WASHINGTON.			
Seattle	New Orleans	.5000	.5000
	New Orleans	.5000	.5416
Tacoma	New Orleans	.6000	.6000
	Sirup, candy-drip	.6000	.6000
WEST VIRGINIA.			
Wheeling	New Orleans, open kettle	.6000	.6167
	New Orleans, open kettle	.5333	.6000
WISCONSIN.			
Milwaukee	New Orleans	.4000	.4000
	New Orleans, open kettle	.4500	.4500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MUTTON, LEG, PER POUND.

State and locality.	Description.	Average price.	
		1906.	1907.
ALABAMA.			
Birmingham	Leg	$0.1950	$0.2167
	Leg	.1733	.1625
Montgomery	Leg	.1417	.1500
	Leg	.1250	.1500
ARKANSAS.			
Little Rock	Leg	.1500	.1688
	Leg	.1500	.1792
CALIFORNIA.			
Los Angeles	Leg	.1250	.1325
	Leg	.1354	.1500
San Francisco	Leg	.1250	.1500
	Leg	.1458	.1650
	Leg	.1333	.1500
	Leg	.1375	.1500
COLORADO.			
Denver	Leg	.1250	.1500
	Leg	.1500	.1500
CONNECTICUT.			
New Haven	Leg	.1550	.1833
	Leg	.1983	.1783
	Leg	.1333	.1367
DELAWARE.			
Wilmington	Leg	.1617	.1800
	Leg	.1500	.1500
DISTRICT OF COLUMBIA.			
Washington	Leg	.1500	.1800
	Leg	.1558	.1700
	Leg	.1567	.1633
	Leg	.1542	.1675
FLORIDA.			
Jacksonville	Leg	.2000	.1800
	Leg	.1642	.1850
	Leg	.1883	.2000
GEORGIA.			
Atlanta	Leg	.1808	.2063
	Leg	.1754	.2000
ILLINOIS.			
Chicago	Leg	.1133	.1133
	Leg	.1467	.1400
	Leg	.1258	.1483
	Leg	.1246	.1354
Peoria	Leg	.1688	.1750
	Leg	.1646	.1625
INDIANA.			
Indianapolis	Leg	.1767	.1379
	Leg	.1950	.1850
	Leg	.1900	.2100
Terre Haute	Leg	.1742	.2158
	Leg	.1517	.1525
IOWA.			
Des Moines	Leg	.1354	.1250
	Leg	.1375	.1375
Dubuque	Leg	.1438	.1467
	Leg	.1438	.1500
KANSAS.			
Topeka	Leg	.1700	.1550
	Leg	.1575	.2242
KENTUCKY.			
Louisville	Leg	.1750	.1667
	Leg	.1517	.1313
LOUISIANA.			
New Orleans	Leg	.1500	.1500
	Leg	.1500	.1500
	Leg	.1650	.1713
MAINE.			
Portland	Leg	.1342	.1467
	Leg	.1567	.1417
	Leg	.1325	.1475

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MUTTON, LEG, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MARYLAND.			
Baltimore	Leg	$0.1733	$0.1733
	Leg	.1375	.1417
	Leg	.1367	.1683
MASSACHUSETTS.			
Boston	Leg	.1288	.1358
	Leg	.1417	.1475
	Leg	.1267	.1317
Fall River	Leg	.1300	.1358
	Leg	.1317	.1425
Lynn	Leg	.1133	.1192
Malden	Leg	.1396	.1483
Worcester	Leg	.1725	.1950
	Leg	.1217	.1283
MICHIGAN.			
Detroit	Leg	.1433	.1400
	Leg	.1400	.1400
Grand Rapids	Leg	.1400	.1450
	Leg	.1450	.1450
MINNESOTA.			
Duluth	Leg	.1500	.1500
	Leg	.1438	.1500
	Leg	.1438	.1500
Minneapolis	Leg	.1400	.1400
	Leg	.1238	.1275
St. Paul	Leg	.1467	.1417
	Leg	.1500	.1575
MISSOURI.			
Kansas City	Leg	.1525	.1550
	Leg	.1550	.1542
St. Louis	Leg	.1042	.1083
	Leg	.1633	.1583
	Leg	.1133	.1167
MONTANA.			
Butte	Leg	.1358	.1542
	Leg	.1396	.1438
NEBRASKA.			
Omaha	Leg	.1417	.1417
	Leg	.1500	.1575
NEW HAMPSHIRE.			
Manchester	Leg	.1767	.1725
	Leg	.1083	.1283
NEW JERSEY.			
Jersey City	Leg	.1308	.1367
	Leg	.1275	.1288
Trenton	Leg	.1600	.1600
	Leg	.1600	.1800
NEW YORK.			
Albany	Leg	.1700	.1700
	Leg	.1600	.1600
Buffalo	Leg	.1100	.1067
	Leg	.1650	.1717
	Leg	.1025	.1196
	Leg	.1400	.1350
	Leg	.1350	.1283
New York (Brooklyn)	Leg	.1250	.1400
	Leg	.1533	.1500
	Leg	.1683	.1750
New York (Manhattan)	Leg	.1250	.1250
	Leg	.1104	.1250
	Leg	.1275	.1363
	Leg	.1383	.1367
	Leg	.1250	.1338
Rochester	Leg	.1325	.1300
	Leg	.1358	.1367
Syracuse	Leg	.1200	.1375
	Leg	.1750	.1750
OHIO.			
Cincinnati	Leg	.1233	.1250
	Leg	.1333	.1333
	Leg	.1500	.1567

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

MUTTON, LEG, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	1907.
OHIO—concluded.			
Cleveland	Leg	$0.1250	$0.1400
	Leg	.1425	.1433
	Leg	.2000	.2000
	Leg	.1400	.1467
Toledo	Leg	.1275	.1308
	Leg	.2000	.2000
OREGON.			
Portland	Leg	.1375	.1500
	Leg	.1458	.1500
PENNSYLVANIA.			
Philadelphia	Leg	.1308	.1492
	Leg	.1417	.1508
	Leg	.1367	.1483
Pittsburg (Allegheny)	Leg	.1500	.1500
	Leg	.1450	.1450
Pittsburg (Pittsburg)	Leg	.1800	.1800
	Leg	.1733	.1733
Scranton	Leg	.1600	.1600
	Leg	.1800	.1867
Wilkes-Barre	Leg	.1667	.1767
	Leg	.1667	.1700
RHODE ISLAND.			
Providence	Leg	.1358	.1275
	Leg	.1742	.1917
SOUTH CAROLINA.			
Charleston	Leg	.1333	.1354
	Leg	.1313	.1458
SOUTH DAKOTA.			
Sioux Falls	Leg	.1658	.1917
	Leg	.1333	.1375
TENNESSEE.			
Memphis	Leg	.1625	.1975
	Leg	.1721	.1763
	Leg	.1563	.1917
Nashville	Leg	.1125	.1250
	Leg	.1208	.1250
TEXAS.			
Dallas	Leg	.1500	.1500
	Leg	.1500	.1958
San Antonio	Leg	.2000	.2000
	Leg	.1500	.1500
UTAH.			
Salt Lake City	Leg	.1500	.1625
	Leg	.1500	.1458
	Leg	.1500	.1600
VIRGINIA.			
Norfolk	Leg	.1500	.1875
	Leg	.1600	.1625
Richmond	Leg	.1650	.1750
	Leg	.1517	.1575
WASHINGTON.			
Seattle	Leg	.1308	.1500
	Leg	.1250	.1500
	Leg	.1354	.1375
Tacoma	Leg	.1650	.1538
	Leg		
WEST VIRGINIA.			
Wheeling	Leg		
	Leg		
WISCONSIN.			
Milwaukee	Leg		
	Leg		

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, FRESH, PER POUND.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
ALABAMA.			
Birmingham	Chops	$0.1792	$0.1729
	Chops	.1708	.1813
	Chops	.1500	.1467
Montgomery	Chops	.1500	.1583
	Chops	.1500	.1500
	Chops	.1500	.1667
ARKANSAS.			
Little Rock	Chops	.1750	.1563
	Chops	.1500	.1563
	Chops	.1688	.1771
CALIFORNIA.			
Los Angeles	Chops	.1700	.1700
	Chops	.1750	.1800
	Chops	.1500	.1500
San Francisco	Chops	.1650	.2000
	Chops	.1625	.1800
	Chops	.1354	.1500
	Chops	.1633	.1800
COLORADO.			
Denver	Chops	.1250	.1563
	Chops	.1225	.1250
	Chops	.1250	.1375
CONNECTICUT.			
New Haven	Chops	.1483	.1558
	Chops	.1533	.1650
	Chops	.1633	.1750
DELAWARE.			
Wilmington	Chops	.1500	.1517
	Chops	.1600	.1533
	Chops	.1525	.1525
DISTRICT OF COLUMBIA.			
Washington	Chops	.1567	.1683
	Chops	.1533	.1575
	Chops	.1567	.1617
	Chops	.1617	.1617
FLORIDA.			
Jacksonville	Chops	.2000	.2000
	Chops	.1675	.1917
	Chops	.2000	.2000
	Chops	.1800	.2000
GEORGIA.			
Atlanta	Chops	.1500	.1563
	Chops	.1500	.1688
	Chops	.1604	.1896
ILLINOIS.			
Chicago	Chops	.1325	.1383
	Chops	.1442	.1450
	Chops	.1163	.1333
	Chops	.1383	.1367
	Chops	.1246	.1238
	Chops	.1325	.1379
Peoria	Chops	.1500	.1325
	Chops	.1442	.1542
	Chops	.1517	.1375
INDIANA.			
Indianapolis	Chops	.1650	.1488
	Chops	.1592	.1633
	Chops	.1550	.1608
Terre Haute	Chops	.1583	.1558
	Chops	.1533	.1617
	Chops	.1258	.1542
IOWA.			
Des Moines	Chops	.1438	.1438
	Chops	.1417	.1500
	Chops	.1250	.1250
Dubuque	Chops	.1438	.1438
	Chops	.1438	.1396
	Chops	.1354	.1375
KANSAS.			
Topeka	Chops	.1396	.1396
	Chops	.1375	.1575
	Chops	.1375	.1375

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, FRESH, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
KENTUCKY.			
Louisville	Chops	$0.1500	$0.1667
	Chops	.1500	.1667
	Chops	.1500	.1479
LOUISIANA.			
New Orleans	Chops	.1558	.1500
	Chops	.1800	.1800
	Chops	.1500	.1625
	Chops	.1542	.1675
MAINE.			
Portland	Chops	.1288	.1492
	Chops	.1433	.1583
	Chops	.1492	.1608
MARYLAND.			
Baltimore	Chops	.1492	.1550
	Chops	.1425	.1375
	Chops	.1342	.1475
	Chops	.1533	.1567
MASSACHUSETTS.			
Boston	Chops	.1300	.1517
	Chops	.1342	.1542
	Chops	.1550	.1758
	Chops	.1575	.1642
Fall River	Chops	.1400	.1375
	Chops	.1433	.1442
	Chops	.1567	.1642
Lynn	Chops	.1400	.1500
	Chops	.1617	.1675
	Chops	.1608	.1592
Malden	Chops	.1533	.1567
	Chops	.1600	.1983
	Chops	.1417	.1450
Worcester	Chops	.1650	.1775
	Chops	.1483	.1667
	Chops	.1458	.1483
MICHIGAN.			
Detroit	Chops	.1450	.1417
	Chops	.1283	.1392
	Chops	.1350	.1333
Grand Rapids	Chops	.1500	.1567
	Chops	.1346	.1392
	Chops	.1363	.1450
MINNESOTA.			
Duluth	Chops	.1313	.1450
	Chops	.1458	.1396
	Chops	.1458	.1492
Minneapolis	Chops	.1396	.1417
	Chops	.1375	.1333
	Chops	.1333	.1313
St. Paul	Chops	.1475	.1488
	Chops	.1463	.1550
	Chops	.1250	.1417
MISSOURI.			
Kansas City	Chops	.1417	.1396
	Chops	.1417	.1354
	Chops	.1375	.1313
St. Louis	Chops	.1325	.1413
	Chops	.1183	.1225
	Chops	.1425	.1408
	Chops	.1600	.1438
MONTANA.			
Butte	Chops	.1625	.1500
	Chops	.1429	.1500
	Chops	.1563	.1500
NEBRASKA.			
Omaha	Chops	.1292	.1354
	Chops	.1250	.1250
	Chops	.1313	.1354
NEW HAMPSHIRE.			
Manchester	Chops	.1442	.1617
	Chops	.1325	.1358
	Chops	.1513	.1608

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, FRESH, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW JERSEY.			
Jersey City	Chops	$0.1517	$0.1533
	Chops	.1558	.1683
	Chops	.1338	.1550
Trenton	Chops	.1433	.1592
	Chops	.1567	.1767
	Chops	.1425	.1492
NEW YORK.			
Albany	Chops	.1650	.1633
	Chops	.1483	.1500
	Chops	.1600	.1633
Buffalo	Chops	.1408	.1433
	Chops	.1492	.1625
	Chops	.1475	.1592
	Chops	.1313	.1392
New York (Brooklyn)	Chops	.1750	.1850
	Chops	.1500	.1667
	Chops	.1567	.1650
	Chops	.1517	.1583
	Chops	.1600	.1817
New York (Manhattan)	Chops	.2000	.2050
	Chops	.1375	.1567
	Chops	.1583	.1400
	Chops	.1817	.1883
	Chops	.1750	.1733
Rochester	Chops	.1350	.1283
	Chops	.1450	.1483
	Chops	.1338	.1350
Syracuse	Chops	.1375	.1517
	Chops	.1500	.1500
	Chops	.1600	.1617
OHIO.			
Cincinnati	Chops	.1488	.1575
	Chops	.1350	.1350
	Chops	.1500	.1429
	Chops	.1308	.1321
Cleveland	Chops	.1433	.1600
	Chops	.1425	.1250
	Chops	.1354	.1413
	Chops	.1500	.1592
Toledo	Chops	.1250	.1475
	Chops	.1475	.1492
	Chops	.1175	.1192
OREGON.			
Portland	Chops	.1500	.1500
	Chops	.1500	.1500
	Chops	.1500	.1625
PENNSYLVANIA.			
Philadelphia	Chops	.1700	.1667
	Chops	.1442	.1425
	Chops	.1767	.1783
	Chops	.1600	.1600
	Chops	.1467	.1633
Pittsburg (Allegheny)	Chops	.1533	.1575
	Chops	.1513	.1625
	Chops	.1608	.1650
Pittsburg (Pittsburg)	Chops	.1558	.1650
	Chops	.1542	.1675
	Chops	.1500	.1500
Scranton	Chops	.1250	.1250
	Chops	.1483	.1550
	Chops	.1625	.1658
Wilkes-Barre	Chops	.1533	.1567
	Chops	.1400	.1325
	Chops	.1500	.1467
RHODE ISLAND.			
Providence	Chops	.1600	.1550
	Chops	.1700	.1517
	Chops	.1692	.1717
SOUTH CAROLINA.			
Charleston	Chops	.1417	.1417
	Chops	.1783	.1680
	Chops	.1783	.1700

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, FRESH, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	1907.
SOUTH DAKOTA.			
Sioux Falls	Chops	$0.1600	$0.1625
	Chops	.1550	.1417
	Chops	.1313	.1333
TENNESSEE.			
Memphis	Chops	.1750	.1792
	Chops	.1708	.1583
	Chops	.1750	.1750
Nashville	Chops	.1396	.1188
	Chops	.1458	.1208
	Chops	.1438	.1271
TEXAS.			
Dallas	Chops	.1583	.1746
	Chops	.1458	.1521
	Chops	.1500	.1771
San Antonio	Chops	.1500	.1563
	Chops	.1708	.1750
	Chops	.1500	.1583
UTAH.			
Salt Lake City	Chops	.1750	.1917
	Chops	.1750	.2000
	Chops	.1750	.1750
VIRGINIA.			
Norfolk	Chops	.1517	.1608
	Chops	.1500	.1633
	Chops	.1500	.1617
Richmond	Chops	.1500	.1479
	Chops	.1288	.1438
	Chops	.1617	.1567
WASHINGTON.			
Seattle	Chops	.1250	.1500
	Chops	.1458	.1500
	Chops, shoulder	.1250	.1250
Tacoma	Chops	.1500	.1500
	Chops	.1625	.1658
	Chops	.1500	.1500
WEST VIRGINIA.			
Wheeling	Chops	.1500	.1592
	Chops	.1575	.1700
	Chops	.1592	.1608
WISCONSIN.			
Milwaukee	Chops	.1200	.1375
	Chops	.1300	.1300
	Chops	.1300	.1367

PORK, SALT, BACON, PER POUND.

ALABAMA.			
Birmingham	Breakfast, smoked, sliced	$0.2500	$0.2667
	Piece	.1313	.1425
	Smoked, sliced	.2417	.2417
Montgomery	Breakfast, smoked, sliced	.2000	.2208
	Breakfast, smoked, sliced	.2150	.2267
	Breakfast, smoked, sliced	.2000	.2000
ARKANSAS.			
Little Rock	Matchless, smoked, sliced	.2150	.2150
	Matchless, smoked, sliced	.2396	.2500
	Sunlight, smoked, sliced	.2000	.2000
CALIFORNIA.			
Los Angeles	Smoked, sliced	.2000	.2000
	Smoked, sliced	.1917	.2000
	Swift's, smoked, sliced	.3000	.3000
San Francisco	Smoked, piece	.1917	.1900
	Smoked, sliced	.2000	.2200
	Smoked, sliced	.2875	.3000
	Smoked, sliced	.2000	.2292
	Smoked, sliced	.2500	.2500
COLORADO.			
Denver	Smoked, sliced	.2000	.2500
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2500	.2500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, BACON, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
CONNECTICUT.			
New Haven	Smoked, piece	$0.1883	$0.1900
	Smoked, sliced	.2000	.2067
	Smoked, sliced	.2200	.2225
DELAWARE.			
Wilmington	Smoked, sliced	.2000	.2000
	Smoked, sliced	.1867	.2000
	Smoked, sliced	.1800	.1983
DISTRICT OF COLUMBIA.			
Washington	Smoked, sliced	.1800	.1900
	Smoked, sliced	.1800	.1850
	Smoked, sliced	.1800	.1883
	Smoked, sliced	.1850	.2000
FLORIDA.			
Jacksonville	Breakfast, smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.1975	.2083
	Breakfast, sugar-cured, sliced	.2500	.2500
GEORGIA.			
Atlanta	Piece	.1250	.1250
	Piece	.1208	.1242
	Smoked, piece	.1750	.1750
ILLINOIS.			
Chicago	Smoked, piece	.1288	.1633
	Smoked, piece	.1967	.1883
	Smoked, piece	.1767	.1883
	Smoked, sliced	.1650	.1733
	Smoked, sliced	.1867	.2100
	Smoked, whole	.1763	.1917
Peoria	Smoked, piece	.1758	.1750
	Smoked, piece	.1817	.1925
	Smoked, sliced	.1817	.1883
INDIANA.			
Indianapolis	Breakfast, sugar-cured, smoked, sliced	.2250	.2500
	Breakfast, sugar-cured, smoked, sliced	.2250	.2467
	Smoked, sliced	.2500	.2500
Terre Haute	Breakfast, smoked, sliced	.2200	.2175
	Smoked, piece	.1500	.1667
	Smoked, sliced	.1917	.2092
IOWA.			
Des Moines	Smoked, sliced	.1950	.2125
	Smoked, sliced	.1917	.2000
	Smoked, sliced	.1650	.2000
Dubuque	Armour's Star, smoked, sliced	.2750	.2708
	Smoked, sliced	.1938	.2000
	Smoked, sliced	.2300	.2400
KANSAS.			
Topeka	Smoked, sliced	.2383	.2000
	Smoked, sliced	.1967	.2075
	Smoked, sliced	.2375	.2167
KENTUCKY.			
Louisville	Breakfast, smoked, piece	.1900	.1938
	Smoked, sliced	.1908	.2146
	Smoked, sliced	.1500	.1754
LOUISIANA.			
New Orleans	English, sugar-cured, smoked, piece	.2200	.2350
	Smoked, sliced	.2425	.2500
	Dove, sugar-cured, smoked, piece	.1700	.1983
MAINE.			
Portland	Smoked, sliced	.2225	.2000
	Smoked, sliced	.2000	.2475
	Smoked, sliced	.1900	.2000
MARYLAND.			
Baltimore	Rib in, smoked, sliced	.1750	.1733
	Smoked, sliced	.1583	.1567
	Smoked, sliced	.1733	.1733
	Smoked, sliced	.1750	.1850
MASSACHUSETTS.			
Boston	Smoked, piece	.1733	.1717
	Smoked, piece	.1508	.1708
	Smoked, sliced	.1825	.1900
	Smoked, sliced	.1617	.1608

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, BACON, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MASSACHUSETTS—concluded.			
Fall River	Smoked, sliced	$0.1592	$0.1658
	Smoked, sliced	.1558	.1567
	Smoked, sliced	.1883	.1917
Lynn	Sliced	.1833	.2000
	Smoked, sliced	.1450	.1517
	Smoked, sliced	.1817	.2000
Malden	Smoked, sliced	.1875	.1925
	Smoked, sliced	.1700	.1758
	Smoked, sliced	.1833	.1883
Worcester	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2175
	Smoked, sliced	.2217	.2158
MICHIGAN.			
Detroit	Boneless, smoked, piece	.1442	.1467
	Breakfast, smoked, piece	.1567	.1667
	Breakfast, smoked, piece	.1542	.1600
Grand Rapids	Breakfast, smoked, sliced	.1600	.1733
	Breakfast, smoked, sliced	.2000	.1950
	Smoked, sliced	.1650	.1667
MINNESOTA.			
Duluth	Smoked, piece	.1508	.1500
	Smoked, sliced	.2000	.2050
	Smoked, sliced	.1725	.1800
Minneapolis	Smoked, sliced	.1617	.1692
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.1883	.1867
St. Paul	Smoked, sliced	.1933	.1917
	Smoked, sliced	.1917	.2600
	Smoked, sliced	.1800	.1800
MISSOURI.			
Kansas City	Smoked, sliced	.1688	.1813
	Smoked, sliced	.1875	.1875
	Smoked, sliced	.2308	.2375
St. Louis	Breakfast, sugar-cured, smoked, piece, 8 to 10 pounds.	.1575	.1758
	Side, smoked, piece, 8 to 10 pounds	.1700	.1819
	Smoked, sliced	.1950	.2050
	Smoked, sliced	.1983	.2050
MONTANA.			
Butte	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2500	.2500
NEBRASKA.			
Omaha	Smoked, sliced	.2000	.2083
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2100
NEW HAMPSHIRE.			
Manchester	Breakfast, smoked, piece	.1792	.1933
	Smoked, sliced	.1667	.1800
	Smoked, sliced	.1783	.1833
NEW JERSEY.			
Jersey City	Smoked, sliced	.1667	.1675
	Smoked, sliced	.1883	.1967
	Smoked, sliced	.1850	.1833
Trenton	Breakfast, smoked, piece	.2000	.2200
	Smoked, sliced	.2117	.2200
	Smoked, sliced	.2000	.2000
NEW YORK.			
Albany	Smoked, sliced	.2275	.2500
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.1800	.1967
Buffalo	Smoked, sliced	.1483	.1600
	Smoked, sliced	.1667	.1900
	Smoked, sliced	.1633	.1833
	Smoked, sliced	.1933	.1608
	Westphalia, boneless, smoked, sliced	.2000	.2000
New York (Brooklyn)	Smoked	.1933	.2117
	Smoked, piece	.1158	.1200
	Smoked, sliced	.2117	.2258
	Smoked, sliced	.1900	.2133
	Smoked, sliced	.2050	.2100
New York (Manhattan)	Breakfast, smoked, sliced	.2083	.2375
	Rib in, smoked, sliced	.2225	.2375
	Rib in, smoked, sliced	.1750	.1817

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, BACON, PER POUND—Continued.

State and locality.	Description.	Average price. 1906.	1907.
NEW YORK—concluded.			
New York (Manhattan)	Smoked, sliced	$0.2200	$0.2250
	Smoked, sliced	.1800	.2050
	Smoked, sliced	.2100	.2258
Rochester	Smoked, piece	.1425	.1650
	Smoked, sliced	.1375	.1358
	Smoked, sliced	.1575	.1383
Syracuse	Smoked, piece	.1800	.1800
	Smoked, sliced	.1650	.1517
	Smoked, sliced	.2383	.2367
OHIO.			
Cincinnati	Smoked, piece	.1683	.1758
	Smoked, piece	.1683	.1783
	Dove, smoked, piece	.1592	.1750
	Smoked, sliced	.1900	.1767
Cleveland	Breakfast, smoked, piece	.1667	.1542
	Armour's Star, breakfast, smoked, sliced.	.2500	.2500
	Smoked, piece	.1525	.1613
	Sugar-cured, smoked, piece	.2167	.2108
	Sugar-cured, smoked, piece	.1700	.1800
Toledo	Breakfast, smoked, sliced	.2167	.2150
	Smoked, sliced	.1800	.1767
	Smoked, sliced	.2200	.2383
OREGON.			
Portland	Home cured, smoked, sliced	.1800	.1800
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2000
PENNSYLVANIA.			
Philadelphia	Breakfast, smoked, sliced	.1660	.1833
	Smoked, sliced	.1967	.2000
	Smoked, sliced	.1708	.1783
	Smoked, sliced	.1600	.1783
Pittsburg (Allegheny)	Smoked, sliced	.1700	.1683
	Smoked, sliced	.1517	.1500
	Smoked, sliced	.1900	.2000
Pittsburg (Pittsburg)	Smoked, sliced	.2000	.2000
	Smoked, sliced	.1950	.1967
	Smoked, sliced	.2000	.2033
Scranton	Boneless, smoked, piece	.1800	.1983
	Breakfast, smoked, piece	.1750	.1767
	Smoked, sliced	.2000	.2000
Wilkes-Barre	Breakfast, smoked, sliced	.2000	.1817
	Smoked, piece	.1600	.1717
	Smoked, piece	.1467	.1483
RHODE ISLAND.			
Providence	Smoked, sliced	.2133	.2067
	Smoked, sliced	.1800	.2017
	Smoked, sliced	.2150	.2133
SOUTH CAROLINA.			
Charleston	Smoked, sliced	.1667	.1717
	Smoked, sliced	.1783	.1950
	Smoked, sliced	.1700	.1733
SOUTH DAKOTA.			
Sioux Falls	Smoked, sliced	.2100	.2000
	Smoked, sliced	.2100	.2083
	Smoked, sliced	.1850	.2033
TENNESSEE.			
Memphis	Breakfast, smoked, sliced	.2117	.2542
	Smoked, sliced	.1917	.2083
	Smoked, sliced	.2000	.2417
Nashville	Belly, sugar-cured, smoked, sliced	.1417	.1458
	Smoked, sliced	.1458	.1500
TEXAS.			
Dallas	Armstrong's Clover, smoked, sliced	.2250	.2500
	Swift's Premium, or Gold Band, smoked, sliced.	.3000	.3000
	Swift's Premium, smoked, sliced	.2500	.2750
San Antonio	Capitol City, smoked, sliced	.3000	.3000
	Gold Band, smoked, sliced	.2500	.2500
	Gold Band smoked, sliced	.2417	.2750

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TABLE 1.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, BACON, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
UTAH.			
Salt Lake City	Smoked, sliced	$0.2500	$0.2500
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2250	.2500
VIRGINIA.			
Norfolk	Smoked, piece	.1683	.1883
	Smoked, piece	.1667	.1792
	Smoked, sliced	.1417	.1692
Richmond	Smoked, sliced	.1675	.1917
	Smoked, sliced	.1667	.1917
	Smoked, sliced	.1658	.1742
WASHINGTON.			
Seattle	Smoked, sliced	.2200	.2833
	Smoked, sliced	.2000	.2500
	Smoked, sliced	.2292	.2500
	Smoked, sliced	.2000	.2000
Tacoma	Smoked, sliced	.2000	.2250
	Smoked, sliced	.2000	.2333
	Smoked, sliced	.2417	.2800
WEST VIRGINIA.			
Wheeling	Smoked, sliced	.1800	.1800
	Smoked, sliced	.1800	.2000
	Smoked, sliced	.1692	.1733
WISCONSIN.			
Milwaukee	Boneless, smoked, piece, 4 to 6 pounds	.1600	.1600
	Smoked, piece	.1700	.1333
	Rib in, smoked, piece	.1808	.1842

PORK, SALT, DRY OR PICKLED, PER POUND.

ALABAMA.			
Birmingham	Dry	$0.1250	$0.1250
	Dry, clear, piece	.1338	.1500
Montgomery	Dry	.1250	.1250
	Dry	.1000	.1000
ARKANSAS.			
Little Rock	Dry	.1250	.1250
	Dry	.1000	.1042
CALIFORNIA.			
Los Angeles	Dry	.1500	.1500
	Dry	.1354	.1500
San Francisco	Pickled	.1250	.1500
	Pickled	.1354	.1500
	Pickled	.1354	.1500
	Pickled	.1354	.1500
COLORADO.			
Denver	Dry	.1100	.1250
	Dry	.1250	.1250
	Dry, belly	.1250	.1250
CONNECTICUT.			
New Haven	Dry	.1267	.1367
	Dry, belly	.1250	.1500
DELAWARE.			
Wilmington	Dry	.1375	.1400
	Dry	.1000	.1483
DISTRICT OF COLUMBIA.			
Washington	Dry	.1438	.1542
	Pickled	.1508	.1667
	Pickled	.1517	.1575
	Pickled	.1517	.1492
FLORIDA.			
Jacksonville	Dry	.1300	.1250
	Dry	.1242	.1225
	Dry	.1317	.1400
GEORGIA.			
Atlanta	Dry	.1250	.1250
	Dry	.1208	.1146

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, DRY OR PICKLED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
ILLINOIS.			
Chicago	Dry	$0.1325	$0.1338
	Dry, clear	.1408	.1417
	Dry, clear	.1133	.1150
	Dry, clear	.1325	.1392
	Dry, clear	.1267	.1367
	Dry, clear	.1275	.1200
Peoria	Dry	.1425	.1438
	Dry	.1442	.1438
	Dry, sides	.1508	.1350
INDIANA.			
Indianapolis	Dry	.1167	.1354
	Pickled	.1375	.1417
Terre Haute	Dry	.1300	.1433
	Pickled	.1250	.1250
IOWA.			
Des Moines	Pickled	.1208	.1250
	Pickled	.1000	.1000
Dubuque	Pickled	.1250	.1208
	Pickled	.1188	.1250
KANSAS.			
Topeka	Dry	.1146	.1188
	Dry	.1058	.1050
KENTUCKY.			
Lou sville	Dry	.1200	.1175
	Dry, sliced	.1525	.1588
LOUISIANA.			
New Orleans	Dry	.0833	.0967
	Dry	.1000	.1000
	Pickled, sweet	.0990	.1092
MAINE.			
Portland	Dry	.1200	.1242
	Dry, clear	.1125	.1208
MARYLAND.			
Baltimore	Dry	.1050	.1100
	Pickled	.1100	.1133
	Pickled, side	.1233	.1275
MASSACHUSETTS.			
Boston	Dry	.1200	.1242
	Dry	.1275	.1533
	Pickled, clear	.1000	.1083
Fall River	Pickled	.1267	.1350
	Pickled	.1167	.1242
Lynn	Pickled	.1000	.1050
	Pickled	.1142	.1200
Malden	Pickled	.1242	.1275
	Pickled	.1067	.1133
Worcester	Dry	.1600	.1600
	Dry, clear	.1333	.1367
MICHIGAN.			
Detroit	Pickled	.1350	.1300
	Pickled	.1350	.1425
Grand Rapids	Dry, clear	.1092	.1083
	Pickled	.1250	.1250
MINNESOTA.			
Duluth	Dry	.1250	.1250
	Dry	.1167	.1250
Minneapolis	Pickled	.1250	.1225
	Pickled	.1179	.1250
St. Paul	Pickled	.1417	.1438
	Pickled	.1367	.1354
MISSOURI.			
Kansas City	Dry	.1250	.1250
	Dry	.1000	.1000
St. Louis	Dry, clear	.1158	.1183
	Dry, clear	.1371	.1425
	Dry, clear	.1300	.1288
MONTANA.			
Butte	Dry, belly	.1275	.1500
	Pickled	.1500	.1500
NEBRASKA.			
Omaha	Dry	.1146	.1188
	Dry	.1146	.1167

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, DRY OR PICKLED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW HAMPSHIRE.			
Manchester	Dry	$0.1342	$0.1325
	Pickled	.1267	.1275
NEW JERSEY.			
Jersey City	Pickled	.1492	.1850
	Pickled, belly	.1408	.1400
Trenton	Pickled	.1400	.1400
	Pickled	.1400	.1400
NEW YORK.			
Albany	Pickled	.1450	.1433
	Pickled, mess	.1533	.1600
Buffalo	Pickled, belly	.1325	.1325
	Pickled, belly	.1425	.1492
	Pickled, belly	.1283	.1408
New York (Brooklyn)	Dry	.1533	.1533
	Dry	.1275	.1500
	Pickled	.1600	.1600
New York (Manhattan)	Dry	.1250	.1350
	Dry	.1600	.1650
	Dry	.1542	.1708
	Dry	.1508	.1617
	Dry, clear	.1467	.1467
Rochester	Dry	.1092	.1167
	Pickled, belly	.1033	.1117
Syracuse	Pickled	.1283	.1133
	Pickled	.1275	.1425
OHIO.			
Cincinnati	Pickled	.1500	.1550
	Pickled	.1642	.1417
	Pickled	.1288	.1300
Cleveland	Dry, clear	.1425	.1567
	Pickled	.1450	.1600
	Pickled, mess	.1500	.1583
Toledo	Dry	.1117	.1100
	Dry, sides	.1250	.1250
OREGON.			
Portland	Pickled	.1354	.1500
	Pickled	.1458	.1500
PENNSYLVANIA.			
Philadelphia	Pickled	.1550	.1600
	Pickled	.1583	.1483
	Pickled, belly	.1533	.1600
Pittsburg (Allegheny)	Dry	.1300	.1300
	Pickled	.1500	.1500
Pittsburg (Pittsburg)	Dry	.1500	.1500
	Dry	.1558	.1600
Scranton	Pickled	.1250	.1250
	Pickled, middlings	.1533	.1567
Wilkes-Barre	Pickled	.1250	.1250
	Pickled	.1342	.1400
RHODE ISLAND.			
Providence	Dry	.1350	.1367
	Dry	.1275	.1300
SOUTH CAROLINA.			
Charleston	Dry, sliced	.1617	.1396
	Dry, sliced	.1658	.1750
	Dry, sliced	.1500	.1467
	Dry, sliced	.1467	.1550
	Pickled, clear	.1500	.1500
	Pickled, mess	.1375	.1500
SOUTH DAKOTA.			
Sioux Falls	Dry	.1167	.1167
	Pickled	.1250	.1250
TENNESSEE.			
Memphis	Dry	.1000	.1250
	Dry, belly	.1213	.1250
Nashville	Dry, butts	.0767	.0800
	Dry	.1175	.1267
TEXAS.			
Dallas	Dry	.1300	.1350
	Dry	.1250	.1483
San Antonio	Dry	.1250	.1250
	Pickled	.1250	.1458

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, DRY OR PICKLED, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
UTAH.			
Salt Lake City	Dry	$0.1500	$0.1500
	Dry	.1500	.1500
	Dry	.1500	.1500
VIRGINIA.			
Norfolk	Dry	.1167	.1146
	Dry, clear	.1242	.1317
Richmond	Dry	.1238	.1313
	Dry, clear	.1000	.1000
	Pickled, shoulder	.1000	.1000
WASHINGTON.			
Seattle	Dry	.1438	.1375
	Pickled	.1354	.1396
	Pickled	.1313	.1396
Tacoma	Pickled	.1500	.1500
	Pickled	.1500	.1500
WEST VIRGINIA.			
Wheeling	Pickled	.1479	.1483
	Pickled	.1250	.1250
WISCONSIN.			
Milwaukee	Dry, back	.1325	.1350
	Pickled	.1400	.1400

PORK, SALT, HAM, PER POUND.

ALABAMA.			
Birmingham	Smoked, sliced	$0.2500	$0.2500
	Smoked, sliced	.2417	.2417
	Sugar-cured, smoked, sliced	.2000	.1958
Montgomery	Sugar-cured, smoked, sliced	.2000	.2208
	Sugar-cured, smoked, sliced	.2000	.2000
	Sugar-cured, smoked, whole, 12 to 16 pounds.	.1700	.1700
ARKANSAS.			
Little Rock	Gold Band, smoked, sliced	.2000	.2250
	Smoked, sliced	.2000	.2375
	Smoked, sliced	.2450	.2500
CALIFORNIA.			
Los Angeles	Smoked, sliced	.3000	.3000
	Smoked, sliced	.2708	.3000
	Smoked, whole, 12 pounds	.1600	.1600
San Francisco	Smoked, sliced	.2500	.3000
	Smoked, sliced	.2500	.2500
	Smoked, sliced	.2500	.2500
	Smoked, sliced	.3000	.3000
	Sugar-cured, smoked, whole, 13 pounds	.1858	.1900
COLORADO.			
Denver	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2500	.2500
CONNECTICUT.			
New Haven	Smoked, sliced	.2500	.2500
	Smoked, sliced	.2725	.2725
	Smoked, sliced	.2625	.2600
DELAWARE.			
Wilmington	Smoked, sliced	.2367	.2500
	Smoked, sliced	.2183	.2258
	Sugar-cured, smoked, sliced	.2000	.2050
DISTRICT OF COLUMBIA.			
Washington	Smoked, sliced	.2050	.2500
	Smoked, sliced	.2000	.2342
	Smoked, sliced	.2000	.2233
	Smoked, sliced	.2500	.2500
FLORIDA.			
Jacksonville	Smoked, sliced	.1933	.1933
	Smoked, sliced	.1913	.2667
	Sugar-cured, smoked, sliced	.2500	.2500
	Sugar-cured, smoked, whole, 10 to 12 pounds.	.1833	.1958

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, HAM, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
GEORGIA.			
Atlanta	Smoked, sliced	$0.2000	$0.2208
	Smoked, sliced	.2188	.2375
	Sugar-cured, smoked, whole, 9 to 14 pounds.	.1600	.1592
ILLINOIS.			
Chicago	Smoked, sliced	.1800	.1800
	Smoked, whole, 10 to 12 pounds	.1367	.1383
	Smoked, whole, 10 to 12 pounds	.1533	.1400
	Smoked, whole, 12 to 14 pounds	.1208	.1321
	Smoked, whole, 12 to 14 pounds	.1517	.1400
	Smoked, whole, 14 to 16 pounds	.1567	.1617
Peoria	Smoked, sliced	.1875	.1850
	Smoked, sliced	.2050	.2000
	Smoked, sliced	.1933	.1950
INDIANA.			
Indianapolis	Smoked, sliced	.2500	.2500
	Sugar-cured, smoked, sliced	.2250	.2483
	Sugar-cured, smoked, sliced	.2500	.2500
Terre Haute	Smoked, sliced	.2083	.2067
	Smoked, sliced	.2083	.2400
	Sugar-cured, smoked, whole, 12 to 17 pounds.	.1575	.1567
IOWA.			
Des Moines	Smoked, sliced	.1950	.2250
	Smoked, sliced	.2067	.2000
	Smoked, sliced	.2000	.2000
Dubuque	Smoked, sliced	.2000	.2000
	Smoked, sliced	.1967	.1917
	Sugar-cured, smoked, sliced	.2542	.2333
KANSAS.			
Topeka	Smoked, sliced	.2500	.2500
	Smoked, sliced	.2417	.2292
	Swift's Premium, smoked, sliced	.2500	.2500
KENTUCKY.			
Louisville	Smoked, sliced	.2000	.2292
	Smoked, sliced	.2188	.2208
	Smoked, sliced	.2000	.1958
LOUISIANA.			
New Orleans	Dove or Swift's Premium, smoked, whole, 6 to 10 pounds.	.1733	.1800
	Smoked, sliced	.1692	.1742
	Swift's Premium, smoked, whole, 6 to 10 pounds.	.1700	.1700
	Gold Band, sugar-cured, smoked, piece	.2025	.2300
MAINE.			
Portland	Smoked, sliced	.2033	.2450
	Smoked, sliced	.2100	.2383
	Smoked, sliced	.2050	.2050
MARYLAND.			
Baltimore	Smoked, sliced	.2317	.2492
	Smoked, whole, 8 to 11 pounds	.1650	.1775
	Smoked, whole, 8 to 12 pounds	.1550	.1483
	Smoked, whole, 8 to 12 pounds	.1683	.1600
MASSACHUSETTS.			
Boston	Smoked, sliced	.1967	.2050
	Smoked, sliced	.2133	.2033
	Smoked, sliced	.2225	.2183
	Smoked, sliced	.2083	.2150
Fall River	Smoked, sliced	.2150	.2192
	Smoked, sliced	.2217	.2300
	Smoked, sliced	.2250	.2067
Lynn	Smoked, sliced	.2400	.2317
	Smoked, sliced	.2867	.3000
	Smoked, sliced	.2500	.2500
Malden	Smoked, sliced	.2575	.2617
	Smoked, sliced	.2833	.2750
	Smoked, sliced	.2125	.2183
Worcester	Smoked, sliced	.2500	.2500
	Smoked, sliced	.2800	.2800
	Smoked, sliced	.2000	.2242
MICHIGAN.			
Detroit	Honey-cured, smoked, whole, 9 to 12 pounds.	.1500	.1500
	Star, smoked, whole, 8 to 12 pounds	.1421	.1417
	Smoked, whole, 9 to 12 pounds	.1483	.1442

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, HAM, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MICHIGAN—concluded.			
Grand Rapids	Smoked, half or whole, 10 to 14 pounds	$0.1533	$0.1533
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2100	.2100
MINNESOTA.			
Duluth	Smoked, sliced	.1800	.1967
	Smoked, whole, 14 to 16 pounds	.1350	.1492
	Smoked, whole, 16 to 18 pounds	.1575	.1500
Minneapolis	Smoked, sliced	.1917	.1933
	Smoked, sliced	.1950	.2050
	Sugar-cured, smoked, sliced	.2000	.1950
St. Paul	Smoked, sliced	.1933	.1950
	Smoked, sliced	.1800	.1800
	Smoked, whole, 12 to 15 pounds	.1533	.1550
MISSOURI.			
Kansas City	Smoked, sliced	.2500	.2500
	Smoked, sliced	.2333	.2500
	Smoked, sliced	.2500	.2500
St. Louis	Smoked, sliced	.1950	.1950
	Smoked, sliced	.2183	.2083
	Smoked, sliced	.1642	.1950
	Smoked, whole, 12 to 14 pounds	.1475	.1483
MONTANA.			
Butte	Smoked, sliced	.2500	.2500
	Smoked, sliced	.2500	.2958
NEBRASKA.			
Omaha	Smoked, sliced	.2100	.2133
	Smoked, sliced	.2100	.2000
	Smoked, sliced	.2117	.2083
NEW HAMPSHIRE.			
Manchester	Smoked, sliced	.2267	.2417
	Smoked, whole, 11 to 14 pounds	.1433	.1508
	Sugar-cured, smoked, whole, 10 to 15 pounds.	.1575	.1508
NEW JERSEY.			
Jersey City	Smoked, sliced	.2550	.2625
	Smoked, sliced	.2067	.2150
	Smoked, sliced	.2183	.2183
Trenton	Smoked, sliced	.2650	.2650
	Smoked, sliced	.2292	.2317
	Sugar-cured, smoked, whole, 12 to 14 pounds.	.1475	.1427
NEW YORK.			
Albany	Smoked, sliced	.2275	.2333
	Smoked, whole, 10 to 12 pounds	.1600	.1458
	Smoked, whole, 10 to 12 pounds	.1600	.1550
Buffalo	Armour's Best, smoked, sliced	.2500	.2625
	Smoked, sliced	.2133	.2133
	Smoked, sliced	.2000	.2050
	Smoked, sliced	.2417	.2392
	Smoked, whole, 10 to 16 pounds	.1292	.1317
New York (Brooklyn)	Smoked, sliced	.2100	.2383
	Smoked, sliced	.1933	.2067
	Smoked, sliced	.2250	.2500
	Smoked, whole, 12 to 14 pounds	.1833	.1833
	Smoked, whole, 12 to 14 pounds	.1642	.1625
New York (Manhattan)	Smoked, sliced	.2283	.2350
	Smoked, whole, 8 to 20 pounds	.2017	.2000
	Smoked, whole, 10 to 12 pounds	.1592	.1608
	Smoked, whole, 10 to 15 pounds	.1800	.1933
	Sugar-cured, smoked, whole, 10 to 15 pounds.	.1525	.1558
	Sugar-cured, smoked, whole, 10 to 16 pounds.	.1658	.1767
Rochester	Smoked, whole, average 10 pounds	.1325	.1342
	Smoked, whole, 11 pounds	.1650	.1492
	Sugar-cured, smoked, whole, 11 to 12 pounds.	.1442	.1475
Syracuse	Smoked, sliced	.1867	.1633
	Smoked, whole, 10 to 14 pounds	.1600	.1600
	Swift's, sugar-cured, smoked, whole, 10 to 14 pounds.	.1700	.1683

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, HAM, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
OHIO.			
Cincinnati	Smoked, sliced	$0.1850	$0.1725
	Smoked, whole, 7 to 13 pounds	.1517	.1388
	Smoked, whole, 7 to 16 pounds	.1533	.1542
	Smoked, whole, 10 to 25 pounds	.1683	.1783
Cleveland	Armour's Star, sugar-cured, smoked, whole, 9 to 16 pounds.	.1733	.1633
	Armour's, sugar-cured, smoked, whole, 9 to 16 pounds.	.1467	.1488
	Sugar-cured, smoked, whole, 16 pounds	.1667	.1458
	Sugar-cured, smoked, whole, 16 pounds	.1600	.1600
Toledo	Smoked, sliced	.1867	.1800
	Smoked, sliced	.2000	.1983
	Smoked, sliced	.2000	.2000
OREGON.			
Portland	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2167	.2500
PENNSYLVANIA.			
Philadelphia	Smoked, whole, 8 to 12 pounds	.1583	.1458
	Smoked, whole, 9 to 12 pounds	.1650	.1683
	Smoked, whole, 8 to 20 pounds	.1550	.1600
	Smoked, whole, 12 to 18 pounds	.1467	.1483
	Smoked, whole, 16 to 30 pounds	.1508	.1533
Pittsburg (Allegheny)	Smoked, sliced	.1800	.1800
	Sugar-cured, smoked, sliced	.1908	.2333
	Sugar-cured, smoked, whole, 14 to 18 pounds.	.1508	.1542
Pittsburg (Pittsburg)	Smoked, sliced	.2425	.2342
	Smoked, sliced	.2125	.2175
	Smoked, sliced	.2200	.2225
Scranton	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2425	.2333
	Smoked, whole, 12½ to 16 pounds	.1658	.1692
Wilkes-Barre	Smoked, sliced	.2000	.1933
	Smoked, whole, 11 to 14 pounds	.1583	.1575
	Smoked, whole, 12 to 16 pounds	.1567	.1608
RHODE ISLAND.			
Providence	Smoked, sliced	.2717	.2700
	Smoked, whole, 8 to 15 pounds	.1600	.1500
	Smoked, whole, 12 to 15 pounds	.1500	.1467
SOUTH CAROLINA.			
Charleston	Smoked, whole, 6 to 8 pounds	.1604	.1675
	Smoked, whole, 7 to 10 pounds	.1758	.1842
	Sugar-cured, smoked, whole, 12 to 16 pounds.	.1625	.1558
SOUTH DAKOTA.			
Sioux Falls	Smoked, sliced	.2167	.2425
	Smoked, sliced	.2100	.2100
	Smoked, sliced	.2050	.2100
TENNESSEE.			
Memphis	Smoked, whole, 8 to 12 pounds	.1525	.1558
	Smoked, whole, 8 to 12 pounds	.1642	.1683
	Sugar-cured, smoked, whole, 10 to 12 pounds.	.1592	.1650
Nashville	Smoked, sliced	.2000	.2000
	Smoked, whole, 10 to 20 pounds	.1442	.1542
	Sugar-cured, smoked, whole, 12 to 20 pounds.	.1563	.1667
TEXAS.			
Dallas	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2000
	Sugar-cured, smoked, whole, 10 to 14 pounds.	.1500	.1500
San Antonio	Gold Band, or Swift's Premium, smoked, sliced.	.2500	.2917
	Smoked, sliced	.2500	.2500
	Gold Band, sugar-cured, smoked, sliced	.2000	.2000
UTAH.			
Salt Lake City	Smoked, sliced	.2500	.3000
	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2500	.2500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PORK, SALT, HAM, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
VIRGINIA.			
Norfolk	Smoked, whole, 5 to 10 pounds	$0.1600	$0.1925
	Smoked, whole, 6 to 10 pounds	.1800	.1942
	Smoked, whole, 8 to 12 pounds	.1633	.1917
Richmond	Smoked, whole, 6 to 8 pounds	.1717	.1775
	Smoked, whole, 8 to 12 pounds	.1783	.1783
	Smoked, whole, 8 to 15 pounds	.1600	.1750
WASHINGTON.			
Seattle	Smoked, sliced	.2000	.2000
	Smoked, sliced	.2000	.2500
	Smoked, sliced	.2292	.2500
	Smoked, sliced	.2000	.2000
Tacoma	Smoked, sliced	.2000	.2250
	Smoked, sliced	.2375	.2800
	Sugar-cured, smoked, whole, 12 to 16 pounds.	.1642	.1933
WEST VIRGINIA.			
Wheeling	Smoked, sliced	.2600	.2075
	Smoked, sliced	.2500	.2500
	Smoked, whole, 10 pounds	.1492	.1600
WISCONSIN.			
Milwaukee	Layton's, smoked, whole, 10 to 18 pounds.	.1583	.1683
	Smoked, whole, 5 to 7 pounds	.1667	.1333
	Smoked, whole, 6 to 8 pounds	.1400	.1400
	Smoked, whole, 10 to 15 pounds	.1400	.1400

POTATOES, IRISH, PER PECK.

ALABAMA.			
Birmingham	Irish	$0.2875	$0.3375
	Irish	.3042	.3292
	Irish	.2792	.2958
Montgomery	Irish	.3083	.3333
	Irish	.3000	.2833
	Irish	.3708	.3667
ARKANSAS.			
Little Rock	Irish	.2500	.2667
	Irish	.2250	.2542
	Irish	.2167	.2500
CALIFORNIA.			
Los Angeles	Irish, sold in 100-pound lots	.2881	.3256
	Irish, sold in 100-pound lots	.2719	.2575
	Irish, sold in 100-pound lots	.2456	.2625
San Francisco	Irish, sold by the pound	.3500	.3625
	Irish, sold by the pound, in 25 and 50 cent lots.	.3625	.3563
	Irish, sold by the pound, in 25 and 50 cent lots.	.3625	.4375
	Irish, sold in 100-pound lots	.2969	.3344
COLORADO.			
Denver	Irish, sold in 100-pound lots	.1638	.1638
	Irish, sold in 100-pound lots	.2038	.2069
	Irish, sold in 100-pound lots	.2119	.2194
CONNECTICUT.			
New Haven	Irish	.2125	.2733
	Irish	.2792	.2875
	Irish	.2700	.2725
DELAWARE.			
Wilmington	Irish	.2708	.2833
	Irish	.3208	.3192
	Irish	.2833	.3458
DISTRICT OF COLUMBIA.			
Washington	Irish	.2733	.2542
	Irish	.2692	.2542
	Irish	.2775	.2542
	Irish	.2775	.2617
FLORIDA.			
Jacksonville	Irish	.3333	.3500
	Irish	.3000	.3542
	Irish	.2875	.3000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

POTATOES, IRISH, PER PECK—Continued.

State and locality.	Description.	Average price. 1906.	1907.
GEORGIA.			
Atlanta	Irish	$0.2750	$0.3000
	Irish	.2500	.2750
	Irish	.2775	.2983
ILLINOIS.			
Chicago	Irish	.1467	.1992
	Irish	.1467	.1917
	Irish	.1750	.2100
	Irish	.1625	.1767
	Irish	.2000	.1808
	Irish	.1567	.1775
Peoria	Irish	.2492	.2425
	Irish	.2300	.2000
	Irish	.2425	.2500
INDIANA.			
Indianapolis	Irish	.2050	.2033
	Irish	.2375	.2167
	Irish	.2133	.2292
Terre Haute	Irish	.2408	.2467
	Irish	.2242	.2200
	Irish	.2367	.2375
IOWA.			
Des Moines	Irish	.2008	.2208
	Irish	.2050	.2125
	Irish	.1900	.1950
Dubuque	Irish	.2042	.1917
	Irish	.1875	.1625
	Irish	.2125	.2167
KANSAS.			
Topeka	Irish	.2042	.2167
	Irish	.2025	.2542
	Irish	.2333	.2333
KENTUCKY.			
Louisville	Irish	.2117	.2208
	Irish	.2958	.2875
	Irish	.2283	.2500
LOUISIANA.			
New Orleans	Irish	.2408	.2958
	Irish	.3500	.3500
	Irish, sold by the pound	.2813	.2813
	Irish, sold by the pound	.3000	.3188
MAINE.			
Portland	Irish	.2142	.2517
	Irish	.2442	.2333
	Irish	.2367	.2367
MARYLAND.			
Baltimore	Irish	.2600	.2725
	Irish	.2800	.2767
	Irish	.2133	.2600
	Irish	.2525	.2733
MASSACHUSETTS.			
Boston	Irish	.2700	.2508
	Irish	.2425	.2317
	Irish	.2375	.2425
	Irish	.2650	.2792
Fall River	Irish	.2617	.2692
	Irish	.3000	.3058
	Irish	.3042	.2950
Lynn	Irish	.1808	.1892
	Irish	.2600	.2658
	Irish	.2725	.2583
Malden	Irish	.2375	.2333
	Irish	.2750	.2592
	Irish	.2725	.2750
Worcester	Irish	.2600	.2608
	Irish	.2625	.2633
	Irish	.2500	.2542
MICHIGAN.			
Detroit	Irish	.2125	.2067
	Irish	.2083	.2192
	Irish	.2342	.2233
Grand Rapids	Irish	.1825	.1758
	Irish	.1600	.2167
	Irish	.1800	.1825

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

POTATOES, IRISH, PER PECK—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MINNESOTA.			
Duluth	Irish	$0.2117	$0.1500
	Irish	.1417	.1683
	Irish	.1442	.1567
Minneapolis	Irish	.1833	.1683
	Irish	.1800	.1692
	Irish	.1575	.1867
St. Paul	Irish	.1775	.1733
	Irish	.1817	.1550
	Irish	.1750	.1700
MISSOURI.			
Kansas City	Irish	.2125	.2125
	Irish	.2667	.2417
	Irish	.1967	.2050
St. Louis	Irish	.2250	.2292
	Irish	.2417	.2667
	Irish	.2333	.2292
	Irish	.2083	.2292
MONTANA.			
Butte	Irish, sold in 100-pound lots	.2157	.2541
	Irish, sold in 100-pound lots	.2400	.2556
	Irish, sold in 100-pound lots	.2231	.2513
NEBRASKA.			
Omaha	Irish	.1750	.1933
	Irish	.1750	.2375
	Irish	.1758	.1833
NEW HAMPSHIRE.			
Manchester	Irish	.2742	.2508
	Irish	.2400	.2475
	Irish	.2450	.2417
NEW JERSEY.			
Jersey City	Irish	.3500	.3500
	Irish	.3250	.3500
	Irish	.3483	.3500
Trenton	Irish	.2258	.2492
	Irish	.2792	.3208
	Irish	.2417	.2833
NEW YORK.			
Albany	Irish	.2525	.2533
	Irish	.2917	.2758
	Irish	.2833	.2792
Buffalo	Irish	.2267	.2075
	Irish	.2400	.2358
	Irish	.1725	.2175
	Irish	.2458	.2475
New York (Brooklyn)	Irish	.3725	.4125
	Irish	.3608	.3500
	Irish	.4000	.4000
	Irish	.4000	.4000
	Irish	.2625	.3708
New York (Manhattan)	Irish	.4250	.4250
	Irish	.2000	.2783
	Irish	.3292	.3333
	Irish	.3833	.3792
	Irish	.3333	.3458
	Irish, sold by the quart	.6400	.6400
	Irish, sold by the quart	.5867	.6400
Rochester	Irish	.2050	.2142
	Irish	.2092	.2117
	Irish	.2042	.2008
Syracuse	Irish	.1767	.1800
	Irish	.2325	.2275
	Irish	.1758	.1850
OHIO.			
Cincinnati	Irish	.2375	.2583
	Irish	.2375	.2583
	Irish	.2375	.3042
	Irish	.2625	.2833
Cleveland	Irish	.2375	.2383
	Irish	.2425	.2350
	Irish	.1983	.2092
	Irish	.2233	.2408
Toledo	Irish	.2108	.2042
	Irish	.2033	.2042
	Irish	.1558	.1583

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

POTATOES, IRISH, PER PECK—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
OREGON.			
Portland	Irish, sold by the pound	$0.2031	$0.2938
	Irish, sold by the pound, in 25 and 50 cent lots.	.2375	.2625
	Irish, sold by the pound, in 25 and 50 cent lots.	.2063	.2844
PENNSYLVANIA.			
Philadelphia	Irish	.2617	.2650
	Irish	.2425	.2375
	Irish	.3125	.3125
	Irish	.2725	.2858
	Irish	.3067	.2925
	Irish	.3208	.3458
	Irish	.2692	.2783
Pittsburg (Allegheny)	Irish	.1967	.2167
	Irish	.2417	.2583
	Irish	.2542	.2942
Pittsburg (Pittsburg)	Irish	.2375	.2467
	Irish	.2625	.2792
	Irish	.2292	.2417
Scranton	Irish	.2583	.2292
	Irish	.2058	.2292
	Irish	.2075	.2183
Wilkes-Barre	Irish	.2292	.2283
	Irish	.2358	.2350
	Irish	.2167	.2208
RHODE ISLAND.			
Providence	Irish	.2250	.2958
	Irish	.2975	.3167
	Irish	.2933	.2583
SOUTH CAROLINA.			
Charleston	Irish	.3625	.2833
	Irish	.2617	.2933
	Irish	.2917	.3000
SOUTH DAKOTA.			
Sioux Falls	Irish	.1604	.1750
	Irish	.1667	.2125
	Irish	.1417	.2000
TENNESSEE.			
Memphis	Irish	.2583	.2708
	Irish	.2417	.2667
	Irish	.2250	.2417
Nashville	Irish	.2042	.2250
	Irish	.2308	.2750
	Irish	.2633	.2883
TEXAS.			
Dallas	Irish	.2875	.3250
	Irish	.2292	.2875
	Irish	.2792	.2958
San Antonio	Irish	.2958	.3500
	Irish	.3000	.3500
	Irish	.3333	.3500
UTAH.			
Salt Lake City	Irish	.2292	.2542
	Irish	.2875	.2250
VIRGINIA.			
Norfolk	Irish	.3125	.3125
	Irish	.2667	.2917
	Irish	.2583	.2583
Richmond	Irish	.2583	.2583
	Irish	.2583	.2708
	Irish	.2833	.2625
WASHINGTON.			
Seattle	Irish	.2667	.3125
	Irish	.2742	.3417
	Irish	.2250	.3583
Tacoma	Irish, sold by the 100 pounds	.2125	.2606
	Irish, sold by the 100 pounds	.1819	.1975
	Irish, sold by the 100 pounds	.2194	.2688
WEST VIRGINIA.			
Wheeling	Irish	.2083	.2333
	Irish	.1950	.2025
	Irish	.2000	.2250

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

POTATOES, IRISH, PER PECK—Concluded.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
WISCONSIN.			
Milwaukee	Irish	$0.1967	$0.1833
	Irish	.1892	.2092
	Irish	.1542	.2125

PRUNES, PER POUND.

ALABAMA.			
Birmingham	30s to 40s	$0.1250	$0.1250
	60s to 70s	.1000	.1000
Montgomery	40s to 50s	.1000	.1094
	60s to 70s	.1000	.1000
ARKANSAS.			
Little Rock	60s to 70s	.1000	.1000
	60s to 70s	.0833	.1250
CALIFORNIA.			
Los Angeles	60s to 70s	.0669	.0810
	60s to 70s	.0681	.0625
San Francisco	60s to 70s	.0700	.0850
	60s to 70s	.0600	.0800
	70s to 80s	.0500	.0563
	70s to 80s	.0500	.0500
COLORADO.			
Denver	60s to 70s	.1250	.1083
	60s to 70s	.0925	.1000
CONNECTICUT.			
New Haven	60s to 70s	.1000	.1000
	60s to 70s	.0900	.0900
	60s to 70s	.1050	.1200
DELAWARE.			
Wilmington	60s to 70s	.0925	.1000
	60s to 70s	.0917	.0925
DISTRICT OF COLUMBIA.			
Washington	50s to 60s	.1000	.1000
	50s to 60s	.1000	.1000
	60s to 70s	.1000	.1000
	60s to 70s	.1100	.1000
FLORIDA.			
Jacksonville	40s to 50s	.1250	.1250
	60s to 70s	.1000	.1000
	60s to 70s	.0833	.1125
GEORGIA.			
Atlanta	60s to 70s	.1250	.1250
	60s to 70s	.0833	.0833
ILLINOIS.			
Chicago	60s to 70s	.0750	.1000
	60s to 70s	.1000	.1000
	60s to 70s	.0750	.0850
Peoria	60s to 70s	.0900	.0958
	60s to 70s	.1000	.1000
INDIANA.			
Indianapolis	60s to 70s	.0903	.1000
	60s to 70s	.0800	.1000
Terre Haute	60s to 70s	.1000	.1000
	60s to 70s, sold in 3-pound lots	.0833	.0833
IOWA.			
Des Moines	60s to 70s	.1000	.1000
	60s to 70s	.0875	.0833
Dubuque	60s to 70s	.0933	.1000
	60s to 70s	.0889	.0928
KANSAS.			
Topeka	60s to 70s	.0833	.0944
	60s to 70s, sold in 3-pound lots	.0833	.0833
KENTUCKY.			
Louisville	60s to 70s	.0800	0800
	60s to 70s	.0800	.0861
LOUISIANA.			
New Orleans	50s to 60s	.1000	.1000
	50s to 60s	.1000	.1000
	60s to 70s	.1000	.1000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PRUNES, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MAINE.			
Portland	50s to 60s	$0.1000	$0.1000
	50s to 60s	.1050	.1000
MARYLAND.			
Baltimore	60s to 70s	.1000	.1000
	60s to 70s	.0967	.1000
	60s to 70s	.1000	.1000
MASSACHUSETTS.			
Boston	60s to 70s	.0700	.0800
	60s to 70s	.0933	.1000
	60s to 70s	.1000	.0958
Fall River	60s to 70s	.0767	.0800
	60s to 70s	.0633	.0675
Lynn	60s to 70s	.0800	.0842
	60s to 70s	.1000	.1000
Malden	60s to 70s	.0800	.0800
	60s to 70s	.1000	.1000
Worcester	40s to 50s	.1200	.1383
	60s to 70s	.0900	.0900
MICHIGAN.			
Detroit	60s to 70s	.0892	.0858
	60s to 70s, sold in 3-pound lots	.0833	.0833
Grand Rapids	50s to 60s	.1000	.1050
	60s to 70s	.1000	.1033
MINNESOTA.			
Duluth	60s to 70s	.0700	.0700
	60s to 70s	.1000	.1000
Minneapolis	50s to 60s	.1000	.1000
	50s to 60s	.1000	.1000
St. Paul	50s to 60s	.1000	.1000
	50s to 60s, sold in 3-pound lots	.0833	.0833
MISSOURI.			
Kansas City	60s to 70s	.0533	.0600
	60s to 70s, sold in 3-pound lots	.0833	.0833
St. Louis	60s to 70s	.0813	.0917
	60s to 70s	.0750	.0813
	60s to 70s	.1000	.1000
MONTANA.			
Butte	60s to 70s	.1083	.1000
	60s to 70s, sold in 3-pound lots	.0833	.0930
NEBRASKA.			
Omaha	60s to 70s	.0800	.1000
	60s to 70s	.1000	.1000
NEW HAMPSHIRE.			
Manchester	60s to 70s	.0867	.0958
	60s to 70s	.0667	.0642
NEW JERSEY.			
Jersey City	60s to 70s	.0900	.1000
	60s to 70s	.0800	.0917
Trenton	60s to 70s	.1000	.1000
	60s to 70s, sold in 3-pound lots	.0833	.0833
NEW YORK.			
Albany	40s to 50s	.1200	.1200
	50s to 60s	.0800	.0983
Buffalo	60s to 70s	.0800	.0800
	60s to 70s	.0808	.0800
New York (Brooklyn)	50s to 60s	.1000	.1083
	50s to 60s	.1000	.1000
	60s to 70s	.0800	.0850
New York (Manhattan)	45s to 55s	.1200	.1200
	45s to 55s	.1200	.1300
	50s to 60s	.0967	.1083
	50s to 60s	.1000	.1067
	50s to 60s	.1275	.1500
	60s to 70s	.1000	.1000
Rochester	60s to 70s	.0983	.1017
	60s to 70s	.0800	.1000
Syracuse	60s to 70s	.1000	.1000
	60s to 70s	.1000	.1100
OHIO.			
Cincinnati	60s to 70s	.0833	.0833
	60s to 70s	.0900	.1021
	60s to 70s	.1000	.1000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

PRUNES, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	Average price. 1907.
OHIO—concluded.			
Cleveland	50s to 60s	$0.1000	$0.1000
	50s to 60s	.1300	.1300
	50s to 60s	.1000	.1000
Toledo	60s to 70s	.0800	.0800
	60s to 70s	.1000	.1000
OREGON.			
Portland	60s to 70s	.0896	.0867
	60s to 70s	.0775	.0717
PENNSYLVANIA.			
Philadelphia	60s to 70s	.1000	.1000
	60s to 70s	.0900	.0900
	60s to 70s	.0900	.0900
Pittsburg (Allegheny)	60s to 70s	.0800	.0875
	60s to 70s	.1000	.1000
Pittsburg (Pittsburg)	60s to 70s	.1000	.1000
	60s to 70s	.1000	.1000
Scranton	60s to 70s	.1000	.1000
	60s to 70s	.0700	.0700
Wilkes-Barre	60s to 70s	.1000	.1000
	60s to 70s	.1000	.1000
RHODE ISLAND.			
Providence	60s to 70s	.0933	.0800
	60s to 70s	.1000	.1000
SOUTH CAROLINA.			
Charleston	60s to 70s	.1000	.1000
	60s to 70s	.1000	.1000
SOUTH DAKOTA.			
Sioux Falls	60s to 70s	.0833	.1000
	60s to 70s, sold in 3-pound lots, 1907	.1000	.0833
TENNESSEE.			
Memphis	40s to 50s	.1000	.1208
	60s to 70s	.0800	.0800
Nashville	50s to 60s, sold in 3-pound lots	.0833	.0833
	70s to 80s	.0800	.0886
TEXAS.			
Dallas	60s to 70s	.1000	.1250
	60s to 70s	.1000	.1250
San Antonio	60s to 70s	.1000	.1083
	60s to 70s	.0833	.0889
UTAH.			
Salt Lake City	60s to 70s	.1250	.1250
	60s to 70s	.1000	.1000
VIRGINIA.			
Norfolk	60s to 70s	.1000	.1000
	60s to 70s	.1000	.1000
Richmond	40s to 50s	.1000	.1000
	60s to 70s	.1000	.1000
WASHINGTON.			
Seattle	60s to 70s	.0600	.0600
	60s to 70s	.0833	.0833
	60s to 70s	.0583	.0675
Tacoma	60s to 70s	.0833	.0833
	60s to 70s	.0833	.0833
WEST VIRGINIA.			
Wheeling	60s to 70s	.1000	.1000
	60s to 70s	.0900	.0900
WISCONSIN.			
Milwaukee	60s to 70s	.1000	.1000
	60s to 70s	.0717	.0800

RICE, PER POUND.

ALABAMA.			
Birmingham	Louisiana, head	$0.0800	$0.0800
	Louisiana, head	.0833	.0833
Montgomery	Carolina, head	.0625	.0625
	Louisiana, head	.0775	.0800

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

RICE, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
ARKANSAS.			
Little Rock	Louisiana, head	$0.0833	$0.0861
	Louisiana, head	.0833	.0917
CALIFORNIA.			
Los Angeles	Carolina, head	.0800	.0800
	Louisiana, head	.0833	.0833
San Francisco	Carolina, head	.1000	.1000
	Louisiana, head	.1000	.1000
	Louisiana, head	.0900	.0900
	Louisiana, head	.1000	.1000
COLORADO.			
Denver	Carolina, head	.0925	.1000
	Japan, head, sold in 3-pound lots	.0833	.0917
CONNECTICUT.			
New Haven	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
DELAWARE.			
Wilmington	Carolina, head	.1000	.1000
	Carolina or Louisiana, head	.1000	.1000
DISTRICT OF COLUMBIA.			
Washington	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
FLORIDA.			
Jacksonville	Carolina, head	.0800	.0800
	Carolina, head	.0750	.0833
	Carolina, head	.0800	.0917
GEORGIA.			
Atlanta	Carolina, head	.1000	.1000
	Carolina head, sold in 2-pound lots	.0750	.0750
	Louisiana, head	.1000	.1000
ILLINOIS.			
Chicago	Louisiana, broken	.0800	.0700
	Louisiana, head	.1000	.1000
	Louisiana, head	.1000	.1000
	Louisiana, head	.1000	.1000
	Louisiana, head	.0942	.1000
Peoria	Carolina, head	.0800	.0800
	Louisiana, head	.1000	.1000
INDIANA.			
Indianapolis	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
Terre Haute	Carolina, head	.1000	.1000
	Carolina, head	.0833	.0833
IOWA.			
Des Moines	Carolina, head	.1208	.1250
	Carolina, head	.0833	.0833
Dubuque	Carolina, head	.0800	.0917
	Carolina, head	.1000	.1000
	Carolina, head, sold in 3-pound lots	.0833	.0833
KANSAS.			
Topeka	Carolina, head	.1000	.1000
	Carolina, head	.0833	.0930
KENTUCKY.			
Louisville	Carolina, head, sold in 3-pound lots	.0833	.0833
	Carolina, head, sold in 3-pound lots, Jan., 1906, to Oct., 1907.	.0833	.0875
LOUISIANA.			
New Orleans	Louisiana, head	.0750	.0750
	Louisiana, head	.0750	.0750
MAINE.			
Portland	Carolina, head	.0900	.0900
	Carolina, head	.1000	.1000
MARYLAND.			
Baltimore	Louisiana, head	.0750	.0800
	Louisiana, head	.0800	.0950
	Louisiana, head	.0783	.0800
	Louisiana, head	.0800	.0800

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

RICE, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MASSACHUSETTS.			
Boston	Carolina, head	$0.0900	$0.0900
	Carolina, head	.0900	.0900
	Carolina, head	.0800	.0800
Fall River	Carolina, head	.1000	.1000
	Carolina, head	.0900	.0900
Lynn	Carolina, head	.0800	.0900
	Carolina, head	.1000	.1000
Malden	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
Worcester	Carolina, head	.0942	.1000
	Carolina, head	.0900	.0900
MICHIGAN.			
Detroit	Japan, head	.0750	.0800
	Louisiana, head	.0900	.0900
Grand Rapids	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
	Carolina, head	.0900	.0900
MINNESOTA.			
Duluth	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
Minneapolis	Carolina, head	.0833	.0833
	Carolina, head	.1000	.1000
	Carolina, head, sold in 3-pound lots	.0833	.0833
St. Paul	Carolina, head	.1000	.1000
	Carolina, head	.0800	.1000
MISSOURI.			
Kansas City	Carolina, head	.1125	.1063
	Carolina, head	.1000	.1000
St. Louis	Louisiana, head	.1000	.1000
	Louisiana, head	.1000	.1000
	Louisiana, head	.1000	.1000
MONTANA.			
Butte	Carolina, head, sold in 2-pound lots	.1250	.1250
	Louisiana, head	.1083	.1250
NEBRASKA.			
Omaha	Carolina, head	.1000	.1000
	Carolina, head	.0833	.0833
NEW HAMPSHIRE.			
Manchester	Carolina, head	.1000	.1000
	Carolina, head	.0800	.0900
NEW JERSEY.			
Jersey City	Carolina, head	.1000	.1000
	Carolina, head	.0800	.1000
Trenton	Carolina, head	.0800	.1000
	Carolina, head	.0800	.1000
NEW YORK.			
Albany	Carolina, head	.0700	.0800
	Carolina, head	.1000	.1000
Buffalo	Carolina, head	.0900	.0900
	Carolina, head	.0800	.0800
	Carolina, head	.1000	.1000
New York (Brooklyn)	Carolina, head	.0800	.0842
	Carolina, head	.0800	.1000
	Carolina, head	.0867	.1000
New York (Manhattan)	Carolina, head	.0800	.0800
	Carolina, head	.0800	.0858
	Carolina, head	.0900	.0900
	Carolina, head	.0900	.0900
	Carolina, head	.0800	.0800
	Louisiana, head	.0875	.0900
Rochester	Carolina, head	.0900	.0900
	Carolina, head	.1000	.1000
	Carolina, head	.0808	.1000
Syracuse	Carolina, head	.1000	.1000
	Japan, head	.0800	.0800
OHIO.			
Cincinnati	Carolina, head	.0900	.0900
	Carolina, head	.0800	.0800
	Carolina, head	.0900	.1000
Cleveland	Carolina, head	.0900	.0900
	Carolina, head	.0800	.0800
	Carolina, head	.0900	.1000
	Louisiana, head	.0700	.0700
Toledo	Carolina, head	.1000	.1000
	Carolina, head	.0867	.0900

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

RICE, PER POUND—Concluded.

State and locality.	Description.	Average price. 1906.	1907.
OREGON.			
Portland	Louisiana, head	$0.0800	$0.0800
	Louisiana, head	.1000	.1000
PENNSYLVANIA.			
Philadelphia	Carolina, head	.0800	.0800
	Carolina, head	.0900	.0900
	Carolina, head	.1000	.1000
	Carolina, head	.0800	.0800
	Carolina, head	.0900	.0967
	Carolina, head, sold in 3-pound lots	.0833	.0833
Pittsburg (Allegheny)	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
Pittsburg (Pittsburg)	Carolina, head	.1000	.1000
	Carolina, head	.0900	.0900
Scranton	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
Wilkes-Barre	Carolina, head	.1000	.1000
	Carolina, head	.1000	.1000
RHODE ISLAND.			
Providence	Carolina, head	.1000	.1000
	Carolina, head	.0800	.0800
SOUTH CAROLINA.			
Charleston	Carolina, head	.0617	.0667
	Carolina, head	.0600	.0600
SOUTH DAKOTA.			
Sioux Falls	Carolina, head	.0900	.1000
	Carolina, head	.0958	.1000
TENNESSEE.			
Memphis	Louisiana, head, sold in 3-pound lots	.0833	.0833
	Louisiana, head, sold in 3-pound lots	.0833	.0833
	Louisiana, head, sold in 3-pound lots	.0833	.0833
Nashville	Carolina, head	.1000	.1000
	Louisiana, head, sold in 3-pound lots	.0833	.0833
TEXAS.			
Dallas	Louisiana, head	.1000	.1000
	Louisiana, head	.1000	.1000
San Antonio	Louisiana, head	.0833	.0958
	Louisiana, head	.0700	.0858
UTAH.			
Salt Lake City	Carolina, head	.1000	.1000
	Japan, head	.0833	.0833
VIRGINIA.			
Norfolk	Carolina, head	.0867	.0917
	Carolina, head	.1000	.1000
Richmond	Carolina, head	.0800	.0800
	Carolina, head	.0800	.0800
	Carolina, head	.0800	.0800
WASHINGTON.			
Seattle	Carolina, head	.1000	.1000
	Japan, head	.0700	.0700
Tacoma	Carolina, head	.0833	.0930
	Louisiana, head	.0833	.0930
WEST VIRGINIA.			
Wheeling	Carolina, head, sold in 3-pound lots, Jan., 1906, to Mar., 1907.	.0833	.0958
	Louisiana, head	.0900	.1000
WISCONSIN.			
Milwaukee	Carolina, head	.1000	.1000
	Carolina, head	.0900	.0800
	Japan, head	.0592	.0600

SUGAR, GRANULATED, PER POUND.

ALABAMA.			
Birmingham	Granulated	$0.0575	$0.0567
	Granulated	.0577	.0592
	Granulated	.0600	.0600
Montgomery	Granulated	.0600	.0600
	Granulated	.0550	.0550
	Granulated	.0500	.0500

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

SUGAR, GRANULATED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
ARKANSAS.			
Little Rock	Granulated	$0.0600	$0.0600
	Granulated	.0550	.0550
	Granulated, sold in 4-pound lots, May, 1906, to Dec., 1907.	.0617	.0625
CALIFORNIA.			
Los Angeles	Granulated, sold in $1 lots	.0591	.0583
	Granulated, sold in $1 lots	.0549	.0556
	Granulated, sold in $1 lots	.0533	.0521
San Francisco	Granulated, sold in $1 lots	.0532	.0564
	Granulated, sold in $1 lots	.0562	.0598
	Granulated, sold in $1 lots	.0496	.0517
	Granulated, sold in $1 lots	.0513	.0544
COLORADO.			
Denver	Granulated, sold in $1 lots	.0579	.0604
	Granulated, sold in $1 lots	.0585	.0583
	Granulated, sold in $1 lots	.0614	.0545
CONNECTICUT.			
New Haven	Granulated	.0600	.0600
	Granulated	.0600	.0642
	Granulated	.0667	.0700
DELAWARE.			
Wilmington	Granulated	.0550	.0567
	Granulated	.0550	.0550
	Granulated	.0550	.0567
DISTRICT OF COLUMBIA.			
Washington	Granulated	.0529	.0533
	Granulated	.0554	.0533
	Granulated	.0521	.0538
	Granulated	.0538	.0550
FLORIDA.			
Jacksonville	Granulated	.0596	.0600
	Granulated	.0600	.0600
	Granulated	.0600	.0600
GEORGIA.			
Atlanta	Granulated	.0550	.0550
	Granulated	.0550	.0550
	Granulated, sold in $1 lots	.0550	.0575
ILLINOIS.			
Chicago	Granulated	.0538	.0546
	Granulated	.0500	.0513
	Granulated	.0517	.0550
	Granulated	.0500	.0517
	Granulated	.0500	.0500
Peoria	Granulated	.0613	.0600
	Granulated	.0600	.0600
	Granulated	.0600	.0600
INDIANA.			
Indianapolis	Granulated	.0600	.0600
	Granulated	.0617	.0600
	Granulated	.0533	.0550
Terre Haute	Granulated	.0567	.0567
	Granulated	.0594	.0594
	Granulated	.0621	.0606
IOWA.			
Des Moines	Granulated, sold in $1 lots	.0556	.0577
	Granulated, sold in $1 lots	.0561	.0556
	Granulated, sold in $1 lots	.0561	.0541
Dubuque	Granulated	.0602	.0619
	Granulated	.0602	.0625
	Granulated	.0617	.0625
KANSAS.			
Topeka	Granulated	.0550	.0500
	Granulated	.0579	.0558
	Granulated	.0513	.0519
KENTUCKY.			
Louisville	Granulated	.0571	.0606
	Granulated	.0517	.0583
	Granulated, sold in $1 lots, 1907	.0567	.0556
LOUISIANA.			
New Orleans	Granulated	.0650	.0650
	Granulated	.0550	.0550
	Granulated	.0550	.0550
	Granulated, sold in 4-pound lots	.0625	.0625

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

SUGAR, GRANULATED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MAINE.			
Portland	Granulated	$0.0600	$0.0600
	Granulated	.0579	.0600
	Granulated	.0571	.0600
MARYLAND.			
Baltimore	Granulated	.0500	.0521
	Granulated	.0500	.0500
	Granulated	.0550	.0550
	Granulated	.0513	.0521
MASSACHUSETTS.			
Boston	Granulated	.0542	.0538
	Granulated	.0525	.0538
	Granulated	.0508	.0538
	Granulated	.0550	.0550
Fall River	Granulated	.0525	.0600
	Granulated	.0588	.0592
	Granulated, sold in $1 lots	.0505	.0509
Lynn	Granulated	.0517	.0550
	Granulated	.0563	.0600
	Granulated	.0538	.0600
Malden	Granulated	.0521	.0538
	Granulated	.0521	.0533
	Granulated	.0521	.0553
Worcester	Granulated	.0583	.0600
	Granulated	.0550	.0592
	Granulated	.0550	.0525
MICHIGAN.			
Detroit	Granulated	.0567	.0550
	Granulated	.0550	.0542
	Granulated, sold in $1 lots	.0556	.0556
Grand Rapids	Granulated	.0579	.0550
	Granulated	.0567	.0600
	Granulated	.0550	.0600
MINNESOTA.			
Duluth	Granulated, sold in $1 lots	.0607	.0625
	Granulated, sold in $1 lots	.0597	.0625
	Granulated, sold in $1 lots	.0594	.0588
Minneapolis	Granulated, sold in $1 lots	.0580	.0583
	Granulated, sold in $1 lots	.0580	.0580
	Granulated, sold in $1 lots	.0569	.0588
St. Paul	Granulated, sold in $1 lots	.0578	.0580
	Granulated, sold in $1 lots	.0588	.0588
	Granulated, sold in $1 lots	.0564	.0572
MISSOURI.			
Kansas City	Granulated	.0508	.0521
	Granulated	.0583	.0600
	Granulated	.0517	.0525
St. Louis	Granulated	.0600	.0600
	Granulated	.0527	.0523
	Granulated	.0642	.0633
	Granulated	.0596	.0608
MONTANA.			
Butte	Granulated, sold in $1 lots	.0671	.0714
	Granulated, sold in $1 lots	.0676	.0684
	Granulated, sold in $1 lots	.0737	.0714
NEBRASKA.			
Omaha	Granulated	.0571	.0588
	Granulated	.0575	.0571
	Granulated	.0592	.0588
NEW HAMPSHIRE.			
Manchester	Granulated	.0600	.0600
	Granulated	.0542	.0550
	Granulated	.0513	.0546
NEW JERSEY.			
Jersey City	Granulated	.0554	.0600
	Granulated	.0521	.0550
	Granulated	.0600	.0600
Trenton	Granulated	.0550	.0550
	Granulated	.0550	.0550
	Granulated	.0550	.0550
NEW YORK.			
Albany	Granulated	.0513	.0538
	Granulated	.0550	.0550
	Granulated	.0550	.0550

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

SUGAR, GRANULATED, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW YORK—concluded.			
Buffalo	Granulated	$0.0550	$0.0550
	Granulated	.0550	.0550
	Granulated	.0550	.0550
	Granulated	.0550	.0550
	Granulated	.0550	.0550
New York (Brooklyn)	Granulated	.0600	.0600
	Granulated	.0500	.0600
	Granulated	.0538	.0600
	Granulated	.0500	.0500
	Granulated, sold in 3½-pound lots	.0514	.0514
New York (Manhattan)	Granulated	.0535	.0550
	Granulated	.0525	.0550
	Granulated	.0600	.0600
	Granulated, sold in 3½-pound lots	.0514	.0514
	Granulated, sold in 3½ and 7 pound lots	.0496	.0500
	Granulated, sold in 7 to 10 pound lots	.0522	.0534
Rochester	Granulated	.0550	.0550
	Granulated	.0550	.0563
	Granulated	.0546	.0600
Syracuse	Granulated	.0533	.0500
	Granulated	.0550	.0550
	Granulated, sold in 10-pound lots	.0567	.0550
OHIO.			
Cincinnati	Granulated	.0550	.0538
	Granulated	.0525	.0550
	Granulated	.0525	.0550
	Granulated	.0550	.0550
Cleveland	Granulated	.0550	.0571
	Granulated	.0550	.0558
	Granulated	.0550	.0550
	Granulated	.0550	.0683
Toledo	Granulated	.0550	.0550
	Granulated	.0563	.0588
	Granulated	.0494	.0500
OREGON.			
Portland	Granulated, sold in $1 lots	.0625	.0625
	Granulated, sold in $1 lots	.0625	.0632
	Granulated, sold in $1 lots	.0596	.0625
PENNSYLVANIA.			
Philadelphia	Granulated	.0550	.0550
	Granulated	.0500	.0517
	Granulated	.0550	.0550
	Granulated	.0513	.0513
	Granulated	.0500	.0500
	Granulated	.0533	.0554
	Granulated	.0500	.0500
	Granulated	.0500	.0538
Pittsburg (Allegheny)	Granulated	.0600	.0600
	Granulated	.0600	.0600
	Granulated, sold in 2-pound lots	.0550	.0550
Pittsburg (Pittsburg)	Granulated	.0600	.0600
	Granulated	.0700	.0617
	Granulated	.0600	.0600
Scranton	Granulated	.0600	.0600
	Granulated	.0600	.0600
	Granulated	.0600	.0600
Wilkes-Barre	Granulated	.0600	.0600
	Granulated	.0600	.0600
	Granulated, sold in $1 lots	.0556	.0556
RHODE ISLAND.			
Providence	Granulated	.0642	.0600
	Granulated	.0600	.0600
	Granulated, sold in 8-pound lots, 1906; 8½-pound lots, 1907.	.0625	.0588
SOUTH CAROLINA.			
Charleston	Granulated	.0533	.0542
	Granulated	.0550	.0550
	Granulated	.0563	.0550
SOUTH DAKOTA.			
Sioux Falls	Granulated	.0583	.0600
	Granulated	.0550	.0565
	Granulated	.0558	.0560

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

SUGAR, GRANULATED, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
TENNESSEE.			
Memphis	Granulated	$0.0550	$0.0621
	Granulated	.0538	.0600
	Granulated	.0573	.0575
Nashville	Granulated, sold in $1 lots	.0556	.0533
	Granulated, sold in $1 lots	.0526	.0531
	Granulated, sold in $1 lots	.0549	.0526
TEXAS.			
Dallas	Granulated, sold in 25-cent lots	.0625	.0625
	Granulated, sold in 25-cent and $1 lots	.0625	.0625
	Granulated, sold in $1 lots	.0625	.0625
San Antonio	Granulated	.0585	.0567
	Granulated	.0575	.0575
	Granulated	.0550	.0550
UTAH.			
Salt Lake City	Granulated, sold in $1 lots	.0679	.0676
	Granulated, sold in $1 lots	.0714	.0714
	Granulated, sold in $1 lots	.0667	.0714
VIRGINIA.			
Norfolk	Granulated	.0513	.0550
	Granulated	.0513	.0550
	Granulated	.0517	.0550
Richmond	Granulated	.0550	.0550
	Granulated	.0500	.0533
	Granulated	.0500	.0508
WASHINGTON.			
Seattle	Granulated	.0600	.0600
	Granulated, sold in $1 lots	.0625	.0646
	Granulated, sold in $1 lots	.0650	.0650
Tacoma	Granulated, sold in $1 lots	.0625	.0669
	Granulated sold in $1 lots	.0625	.0632
	Granulated, sold in $1 lots	.0625	.0665
WEST VIRGINIA.			
Wheeling	Granulated	.0583	.0600
	Granulated	.0600	.0600
	Granulated	.0600	.0600
WISCONSIN.			
Milwaukee	Granulated	.0504	.0529
	Granulated	.0500	.0525
	Granulated	.0550	.0550
	Granulated	.0504	.0519

TEA, PER POUND.

ALABAMA.			
Birmingham	English breakfast	$0.6000	$0.6000
Montgomery	English breakfast and gunpowder	.5000	.5000
	Oolong and gunpowder	.7500	.7500
ARKANSAS.			
Little Rock	Oolong and imperial	.5000	.5000
	Oolong, young hyson, Ceylon, and gunpowder.	.7500	.7500
CALIFORNIA.			
Los Angeles	Gunpowder	.5000	.5000
	Japan	.5000	.5000
San Francisco	Ceylon	.5000	.5000
	Japan	.5000	.5000
	Oolong	.5000	.5000
	Oolong and English breakfast	.5000	.5000
COLORADO.			
Denver	English breakfast	.6000	.6000
	Oolong	.3500	.3500
CONNECTICUT.			
New Haven	Oolong	.5000	.5000
	Oolong	.5000	.5000
DELAWARE.			
Wilmington	Imperial	.6000	.6000
	Japan	.6000	.6000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

TEA, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
DISTRICT OF COLUMBIA.			
Washington	Oolong	$0.5000	$0.5000
	Oolong	.5000	.5000
	Oolong	.6000	.6000
	Oolong, green	.5000	.5000
FLORIDA.			
Jacksonville	Formosa, oolong, and moyune gunpowder.	.6000	.6000
	Gunpowder and English breakfast	.5000	.5000
	Hyson, oolong, Ceylon, and English breakfast.	.6000	.6000
GEORGIA.			
Atlanta	Gunpowder	.5000	.5000
	Tetley's	.6000	.6000
ILLINOIS.			
Chicago	Japan	.5000	.5000
	Japan	.5000	.5000
	Japan	.5000	.5000
	Japan	.5000	.5000
	Japan	.5000	.5000
	Japan	.5000	.4000
Peoria	Imperial, green	.5000	.5000
	Japan	.6000	.6000
INDIANA.			
Indianapolis	Gunpowder	.4500	.4500
	Imperial	.6000	.6000
Terre Haute	Gunpowder	.6000	.6000
	Imperial	.6000	.6000
IOWA.			
Des Moines	Japan, uncolored	.5000	.5000
	Japan, uncolored	.4500	.4500
Dubuque	Japan, sun-dried	.5000	.5000
	Japan, sun-dried	.4000	.4000
KANSAS.			
Topeka	Japan, basket-fired	.4000	.4000
	Oolong	.4000	.4000
KENTUCKY.			
Louisville	Black	.5500	.5500
	Oolong and gunpowder	.5000	.6000
LOUISIANA.			
New Orleans	Black and green, oolong and gunpowder	.5000	.5000
	Oolong and green imperial	.6000	.6000
	Oolong and imperial	.6000	.6000
MAINE.			
Portland	Oolong	.5000	.5000
	Oolong	.5000	.5000
MARYLAND.			
Baltimore	Formosa, oolong	.6000	.6000
	Japan, imperial	.5000	.5000
	Japan, uncolored	.6000	.6000
MASSACHUSETTS.			
Boston	Formosa, oolong	.3500	.3500
	Formosa, oolong	.5000	.5000
	Japan, oolong	.4000	.4000
Fall River	Oolong	.5000	.5000
	Oolong	.3500	.3500
Lynn	Formosa, oolong	.4000	.3500
	Oolong	.5000	.5000
Malden	Formosa, oolong	.4000	.4000
	Formosa, oolong	.5000	.5000
Worcester	Oolong, black	.6000	.6000
	Oolong and Japan	.6000	.6000
MICHIGAN.			
Detroit	English breakfast	.5000	.5000
	Japan, uncolored	.3500	.3500
Grand Rapids	Japan, green	.5000	.5000
	Japan, New Moon, No. 31	.5000	.5000
MINNESOTA.			
Duluth	Japan, sun-dried	.5000	.5000
	Japan, sun-dried, uncolored	.5000	.5000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

TEA, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MINNESOTA—concluded.			
Minneapolis	Japan, uncolored	$0.5000	$0.5000
	Japan, uncolored	.5000	.5000
	Japan, uncolored	.5500	.5500
St. Paul	Japan, uncolored	.4000	.5000
	Japan, uncolored	.5000	.5000
MISSOURI.			
Kansas City	Oolong	.5000	.5000
	Oolong	.3500	.3500
St. Louis	Gunpowder	.4500	.4500
	Oolong	.4500	.4500
	Oolong	.4000	.4000
	Oolong	.6000	.6000
MONTANA.			
Butte	Ceylon and India	.7500	.6500
	Japan	.5000	.5000
NEBRASKA.			
Omaha	Gunpowder	.5000	.5000
	Japan	.5000	.5000
NEW HAMPSHIRE.			
Manchester	Formosa	.4000	.4000
	Oolong and Japan	.4000	.4000
NEW JERSEY.			
Jersey City	English breakfast	.5000	.5000
	Young hyson, black	.5000	.5000
Trenton	Formosa and hyson	.5000	.5000
	Formosa and young hyson	.5000	.5000
NEW YORK.			
Albany	Oolong	.4000	.4000
	Oolong	.5000	.5000
Buffalo	Oolong	.5000	.5000
	Oolong	.5000	.5000
	Young hyson	.5000	.5000
	Young hyson	.5060	.5000
New York (Brooklyn)	Ceylon, White Rose	.6000	.6000
	Oolong, Japan, gunpowder, and Ceylon	.5000	.5000
	Oolong and young hyson	.5000	.5000
New York (Manhattan)	Ceylon, black	.3500	.3500
	Japan	.5000	.5000
	Japan	.5000	.5000
	Oolong	.5000	.5000
	Oolong	.5000	.5000
Rochester	English breakfast	.5167	.5000
	Gunpowder	.5000	.5000
	Japan	.5000	.5000
Syracuse	Japan	.5000	.5000
	Oolong and Japan	5000	.5000
OHIO.			
Cincinnati	Young hyson	.5000	.5000
	Young hyson	.6000	.6000
	Young hyson	.6000	.6000
Cleveland	Japan	.4000	.4000
	Japan, uncolored	.5000	.5000
	Oolong and Japan	.5000	.5000
	Oolong, young hyson, and Japan	.3500	.3500
Toledo	English breakfast	.4500	.4500
	Japan	.5000	.5000
OREGON.			
Portland	Japan	.5000	.4417
	Japan	.5000	.5000
PENNSYLVANIA.			
Philadelphia	Foochow, black	.5000	.5000
	Formosa, black	.5000	.5000
	Formosa, oolong	.5000	.5000
	Oolong	.5000	.5000
	Oolong, black	.4000	.4000
Pittsburg (Allegheny)	Japan	.5000	.5000
	Oolong and young hyson	.6000	.6000
Pittsburg (Pittsburg)	Oolong	.5000	.5000
	Oolong	.5000	.5000
Scranton	English breakfast	.5000	.5000
	Oolong and gunpowder	.5000	.5000
Wilkes-Barre	English breakfast	.5000	.5000
	Oolong	.5000	.5000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

TEA, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
RHODE ISLAND.			
Providence	Oolong	$0.4000	$0.4000
	Oolong	.6000	.6000
SOUTH CAROLINA.			
Charleston	Gunpowder, green	.5000	.5000
	Soonfong, green and black	.5000	.5000
SOUTH DAKOTA.			
Sioux Falls	Japan	.5000	.5000
	Japan	.5000	.5000
TENNESSEE.			
Memphis	Gunpowder	.6000	.6000
	Gunpowder	.6500	.6500
	Gunpowder	.6000	.6000
Nashville	Gunpowder and imperial	.5000	.5000
	Gunpowder, green	.6000	.6000
TEXAS.			
Dallas	Ceylon, young hyson, and English breakfast.	.6500	.6500
	Oolong and imperial	.6000	.6000
San Antonio	Gunpowder and English breakfast	.5000	.5000
	Moyune, gunpowder, and oolong	.5000	.5000
UTAH.			
Salt Lake City	Japan	.6500	.6500
	Japan	.5000	.5000
VIRGINIA.			
Norfolk	Oolong and gunpowder	.5000	.5000
	Oolong, gunpowder, black and green	.4000	.4000
Richmond	Gunpowder	.6000	.6000
	Oolong and gunpowder	.5000	.5000
WASHINGTON.			
Seattle	Japan	.6000	.6000
	Japan, Ceylon	.6000	.6000
Tacoma	Japan	.5000	.5000
	Japan, uncolored	.5000	.5000
WEST VIRGINIA.			
Wheeling	Gunpowder, green	.5000	.5000
	Gunpowder, green	.5000	.5000
WISCONSIN.			
Milwaukee	Japan	.3708	.3500
	Young hyson	.4000	.4000

VEAL, CUTLETS, PER POUND.

ALABAMA.			
Birmingham	Cutlets	$0.2000	$0.2000
	Cutlets	.1500	.1500
Montgomery	Cutlets	.1313	.1333
	Cutlets	.1396	.1500
ARKANSAS.			
Little Rock	Cutlets	.1500	.1500
	Cutlets	.1708	.1500
CALIFORNIA.			
Los Angeles	Cutlets	.2000	.2067
	Cutlets	.2292	.2500
San Francisco	Cutlets	.2000	.2000
	Cutlets	.1883	.2000
	Cutlets	.2000	.2000
	Cutlets	.1800	.1800
COLORADO.			
Denver	Cutlets	.2146	.2146
	Cutlets	.2250	.2250
CONNECTICUT.			
New Haven	Cutlets	.2500	.2500
	Cutlets	.2500	.2500
DELAWARE.			
Wilmington	Cutlets	.2450	.2500
	Cutlets	.2000	.2000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

VEAL, CUTLETS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
DISTRICT OF COLUMBIA.			
Washington	Cutlets	$0.2500	$0.2500
	Cutlets	.2500	.2425
	Cutlets	.2467	.2500
	Cutlets	.2500	.2500
FLORIDA.			
Jacksonville	Cutlets	.2000	.2000
	Cutlets	.2500	.2500
	Cutlets	.2500	.2500
GEORGIA.			
Atlanta	Cutlets	.1500	.1583
	Cutlets	.1646	.1938
ILLINOIS.			
Chicago	Cutlets	.1358	.1417
	Cutlets	.1800	.1800
	Cutlets	.1508	.1400
	Cutlets	.1800	.1717
Peoria	Cutlets	.1475	.1500
	Cutlets	.1683	.1600
INDIANA.			
Indianapolis	Cutlets	.2133	.2458
	Cutlets	.2767	.2742
	Cutlets	.2417	.2625
Terre Haute	Cutlets	.1725	.1833
	Cutlets	.1883	.1883
IOWA.			
Des Moines	Cutlets	.1900	.2000
	Cutlets	.1375	.1354
Dubuque	Cutlets	.2000	.2000
	Cutlets	.2000	.2000
KANSAS.			
Topeka	Cutlets	.1933	.2000
	Cutlets	.1717	.1950
KENTUCKY.			
Louisville	Cutlets	.2500	.2500
	Cutlets	.2450	.2333
MAINE.			
Portland	Cutlets	.2250	.2575
	Cutlets	.2500	.2650
MARYLAND.			
Baltimore	Cutlets	.2117	.2133
	Cutlets	.2500	.2667
	Cutlets	.2317	.2067
MASSACHUSETTS.			
Boston	Cutlets	.2950	.2575
	Cutlets	.2950	.3242
	Cutlets	.2408	.2442
Fall River	Cutlets	.2800	.2867
	Cutlets	.2183	.2158
Lynn	Cutlets	.2842	.2842
	Cutlets	.2833	.3000
Malden	Cutlets	.2950	.2967
	Cutlets	.2725	.2733
Worcester	Cutlets	.2800	.3000
	Cutlets	.2942	.2883
MICHIGAN.			
Detroit	Cutlets	.1533	.1600
	Cutlets	.1650	.1592
Grand Rapids	Cutlets	.1600	.1600
	Cutlets	.1900	.1950
MINNESOTA.			
Duluth	Cutlets	.1525	.1600
	Cutlets	.2000	.2000
Minneapolis	Cutlets	.1500	.1625
	Cutlets	.1575	.1575
St. Paul	Cutlets	.1417	.1438
	Cutlets	.1250	.1250
MISSOURI.			
Kansas City	Cutlets	.2000	.2000
	Cutlets	.2000	.2000
St. Louis	Cutlets	.2317	.2342
	Cutlets	.2692	.2625
	Cutlets	.2900	.2658

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

VEAL, CUTLETS, PER POUND—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
MONTANA.			
Butte	Cutlets	$0.1500	$0.1354
	Cutlets	.1500	.1967
NEBRASKA.			
Omaha	Cutlets	.1625	.1625
	Cutlets	.1600	.1650
NEW HAMPSHIRE.			
Manchester	Cutlets	.2133	.2233
	Cutlets	.2500	.2500
NEW JERSEY.			
Jersey City	Cutlets	.2183	.2033
	Cutlets	.1950	.2000
Trenton	Cutlets	.2500	.2500
	Cutlets	.2500	.2500
NEW YORK.			
Albany	Cutlets	.2500	.2550
	Cutlets	.2650	.2650
Buffalo	Cutlets	.2433	.2500
	Cutlets	.2083	.2175
	Cutlets	.2000	.2017
	Cutlets	.1883	.1883
	Cutlets	.2358	.2500
New York (Brooklyn)	Cutlets	.2450	.2575
	Cutlets	.2400	.2400
	Cutlets	.2500	.2433
New York (Manhattan)	Cutlets	.2800	.2800
	Cutlets	.2533	.2800
	Cutlets	.2450	.2433
	Cutlets	.2500	.2500
Rochester	Cutlets	.1400	.1400
	Cutlets	.1917	.1933
Syracuse	Cutlets	.2000	.1850
	Cutlets	.2200	.2400
OHIO.			
Cincinnati	Cutlets	.2000	.2000
	Cutlets	.1800	.1800
	Cutlets	.2000	.2000
Cleveland	Cutlets	.2400	.2658
	Cutlets	.2167	.2142
	Cutlets	.2200	.2200
Toledo	Cutlets	.1950	.1675
	Cutlets	.2000	.2000
OREGON.			
Portland	Cutlets	.1500	.1500
	Cutlets	.1500	.1500
PENNSYLVANIA.			
Philadelphia	Cutlets	.2467	.2500
	Cutlets	.2117	.2275
	Cutlets	.2167	.2317
Pittsburg (Allegheny)	Cutlets	.2200	.2200
	Cutlets	.2117	.2033
Pittsburg (Pittsburg)	Cutlets	.2375	.2325
	Cutlets	.2500	.2433
Scranton	Cutlets	.2000	.2000
	Cutlets	.2500	.2500
Wilkes-Barre	Cutlets	.2000	.2000
	Cutlets	.2000	.2000
RHODE ISLAND.			
Providence	Cutlets	.3017	.2800
	Cutlets	.3300	.3400
SOUTH CAROLINA.			
Charleston	Cutlets	.1767	.1867
	Cutlets	.1592	.1833
SOUTH DAKOTA.			
Sioux Falls	Cutlets	.1600	.1867
	Cutlets	.1333	.1375
TENNESSEE.			
Memphis	Cutlets	.2500	.2500
	Cutlets	.1917	.2000
Nashville	Cutlets	.2000	.2208
	Cutlets	.2000	.2000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

VEAL, CUTLETS, PER POUND—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
TEXAS.			
Dallas	Cutlets	$0.1500	$0.1500
	Cutlets	.1500	.1500
San Antonio	Cutlets	.1500	.1500
	Cutlets	.1500	.1500
UTAH.			
Salt Lake City	Cutlets	.2000	.2000
	Cutlets	.2000	.2000
	Cutlets	.1750	.2000
VIRGINIA.			
Norfolk	Cutlets	.2000	.2100
	Cutlets	.1850	.2108
Richmond	Cutlets	.2000	.2017
	Cutlets	.2000	.2033
WASHINGTON.			
Seattle	Cutlets	.1500	.1500
	Cutlets	.1500	.1500
	Cutlets	.1500	.1500
Tacoma	Cutlets	.2000	.2000
	Cutlets	.2000	.2000
WEST VIRGINIA.			
Wheeling	Cutlets	.2375	.2350
	Cutlets	.2242	.2333
WISCONSIN.			
Milwaukee	Cutlets	.1500	.1542
	Cutlets	.1400	.1400

VINEGAR, PER GALLON.

ALABAMA.			
Birmingham	Cider	$0.3500	$0.3500
	Cider	.4000	.4000
Montgomery	Cider	.2500	.2500
	Cider, sold by the quart	.4000	.4000
ARKANSAS.			
Little Rock	Cider	.4000	.4000
	Cider	.3500	.3500
CALIFORNIA.			
Los Angeles	Cider	.5000	.5000
	Cider	.5000	.5000
San Francisco	Cider	.5000	.5000
	Cider	.3500	.3500
	Cider	.5000	.5000
	Cider	.3500	.3500
COLORADO.			
Denver	Cider	.4000	.4000
	Cider	.3000	.3000
CONNECTICUT.			
New Haven	Cider	.2500	.2500
	Cider	.2500	.2500
DELAWARE.			
Wilmington	Cider	.2500	.2500
	Cider, sold by the quart	.2000	.2000
	Cider, sold by the quart	.2800	.2800
DISTRICT OF COLUMBIA.			
Washington	Cider	.2500	.2500
	Cider	.2500	.2500
	Cider	.2500	.2500
	Cider	.2500	.2500
FLORIDA.			
Jacksonville	Cider	.2500	.2500
	Cider, sold by the quart	.4000	.4000
	Cider, sold by the quart	.4000	.4000
GEORGIA.			
Atlanta	Cider	.4000	.4000
	Cider	.3000	.3375

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

VINEGAR, PER GALLON—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
ILLINOIS.			
Chicago	White wine	$0.1500	$0.1500
	White wine	.2500	.2500
	White wine	.1500	.1500
	White wine	.2000	.2000
Peoria	Cider	.2500	.2500
	Cider	.3000	.3000
INDIANA.			
Indianapolis	Cider	.3000	.3000
	Cider	.2500	.2675
Terre Haute	Cider	.2500	.2500
	Cider	.2000	.2000
IOWA.			
Des Moines	Cider	.2500	.3000
	Cider	.2833	.3250
Dubuque	Cider	.3000	.3000
	Cider	.3000	.3000
KANSAS.			
Topeka	Cider	.2000	.2000
KENTUCKY.			
Louisville	Cider	.3500	.3500
	Cider	.3500	.3500
LOUISIANA.			
New Orleans	Cider	.4000	.4000
	Cider	.4000	.4000
	Cider	.4000	.4000
MAINE.			
Portland	Cider	.2500	.2500
	Cider	.2500	.2500
MARYLAND.			
Baltimore	Cider	.2500	.2500
	Cider	.2400	.2400
	Grain	.2000	.2000
MASSACHUSETTS.			
Boston	Cider	.2500	.2500
	Cider	.2417	.2500
	Cider	.2500	.2500
Fall River	Cider	.2000	.2000
	Cider, sold by the quart	.2000	.2000
Lynn	Cider	.1650	.1850
	Cider	.2500	.2500
Malden	Cider	.2417	.2500
	Cider	.2500	.2500
Worcester	Cider	.2000	.2000
	Cider	.2000	.2000
MICHIGAN.			
Detroit	Cider	.2000	.2125
	Cider	.2875	.3000
Grand Rapids	Cider	.1800	.1817
	Cider, sold by the quart	.2800	.3033
MINNESOTA.			
Duluth	Cider	.3500	.3500
	Cider	.3500	.3500
Minneapolis	Cider	.2917	.3333
	Cider	.3000	.3083
St. Paul	Cider	.2500	.2500
	Cider	.3000	.3000
MISSOURI.			
Kansas City	Cider	.2000	.2000
	Cider	.2000	.2000
St. Louis	Cider	.3000	.3000
	Cider	.2000	.2000
	Grain	.1583	.1500
MONTANA.			
Butte	Cider	.6000	.6000
	Grain	.3500	.3500
NEBRASKA.			
Omaha	Cider	.3000	.3000
	Cider	.3000	.3000

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TABLE L.—RETAIL PRICES OF FOOD, 1906 AND 1907—Continued.

VINEGAR, PER GALLON—Continued.

State and locality.	Description.	Average price.	
		1906.	1907.
NEW HAMPSHIRE.			
Manchester	Cider	$0.2000	$0.2167
	Cider	.2000	.2208
NEW JERSEY.			
Jersey City	Cider	.2083	.2250
	Cider, sold by the quart	.2800	.2800
Trenton	Cider	.2500	.2500
	Cider	.2500	.2500
NEW YORK.			
Albany	Cider	.2000	.2000
	Cider	.2500	.2500
Buffalo	Cider	.1658	.1700
	Cider	.1675	.1800
New York (Brooklyn)	Cider	.2500	.2500
	Cider, sold by the quart	.2100	.2233
	Cider, sold by the quart	.2800	.3200
New York (Manhattan)	Cider	.2500	.2500
	Cider	.2500	.2500
	Cider	.1867	.2133
	Cider, sold by the quart	.2000	.2267
	Cider, sold by the quart	.2800	.2800
	White wine	.1600	.2150
Rochester	Cider	.2000	.2000
	Cider	.2000	.2000
Syracuse	Cider	.2000	.2000
	Cider	.2500	.2667
OHIO.			
Cincinnati	Cider	.2500	.2500
	Cider	.2500	.2625
	Cider	.2500	.2500
Cleveland	Cider	.2200	.2500
	Cider	.1800	.2000
	Cider	.2000	.2400
Toledo	Cider	.1500	.1500
	Cider	.2500	.2625
OREGON.			
Portland	Cider	.2500	.2500
	Cider	.3000	.3000
PENNSYLVANIA.			
Philadelphia	Cider	.2300	.2400
	Cider	.2500	.2500
	Cider	.1800	.1800
Pittsburg (Allegheny)	Cider, sold by the quart	.2400	.2000
	Cider, sold by the quart	.3200	.3200
Pittsburg (Pittsburg)	Cider, sold by the quart	.3200	.3200
	Cider, sold by the quart	.3200	.3200
Scranton	Cider	.2500	.2500
	Cider	.2500	.2500
Wilkes-Barre	Cider	.3000	.3000
	Cider	.2500	.2500
RHODE ISLAND.			
Providence	Cider	.2583	.2750
	Cider	.2958	.3000
SOUTH CAROLINA.			
Charleston	Cider	.4000	.4000
	Cider	.4000	.4000
SOUTH DAKOTA.			
Sioux Falls	Cider	.3500	.3500
	Cider	.3500	.3500
TENNESSEE.			
Memphis	Cider	.3000	.3750
	Cider	.3000	.3250
Nashville	Cider	.3000	.3000
	Cider	.3000	.4000
TEXAS.			
Dallas	Cider	.4000	.4000
	Cider	.3500	.3500
San Antonio	Cider	.3500	.3500
	Cider	.3000	.3167
UTAH.			
Salt Lake City	Cider	.5000	.5000
	Cider	.5000	.5000

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TABLE I.—RETAIL PRICES OF FOOD, 1906 AND 1907—Concluded.

VINEGAR, PER GALLON—Concluded.

State and locality.	Description.	Average price.	
		1906.	1907.
VIRGINIA.			
Norfolk	Cider	$0.3000	$0.3000
	Cider	.3000	.3000
Richmond	Cider	.4000	.4000
	Cider, sold by the quart	.3200	.3200
WASHINGTON.			
Seattle	Cider	.4000	.4000
	Cider	.4000	.4000
	Cider	.5000	.5000
Tacoma	Cider	.4000	.4000
	Cider	.5000	.5000
WEST VIRGINIA.			
Wheeling	Cider	.2000	.2000
	Malt	.2000	.2000
WISCONSIN.			
Milwaukee	Cider	.2500	.2500
	Cider	.2500	.2500

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, BY MONTHS, 1905 TO 1907.

[Average price for 1890-1899=100.0.]

Month.	Apples, evaporated.			Beans, dry.			Beef, fresh, roasts.			Beef, fresh, steaks.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	102.1	113.1	119.5	114.7	114.2	116.2	111.7	113.9	116.9	111.2	114.2	117.6
February	102.1	113.5	119.4	116.2	115.2	116.2	111.7	114.2	117.4	111.6	114.5	117.8
March	103.3	115.4	119.9	116.4	115.2	116.2	112.4	114.8	117.6	112.1	115.1	118.9
April	103.7	115.9	120.7	116.5	115.7	116.3	113.6	115.7	118.7	113.5	116.0	119.7
May	104.2	116.7	121.2	116.2	115.4	116.6	113.7	116.9	120.1	114.5	117.4	121.0
June	104.5	117.0	123.8	116.2	115.3	116.9	113.9	117.2	121.0	115.2	118.2	122.3
July	104.9	117.2	125.0	116.2	115.3	117.4	113.9	117.2	121.2	115.1	118.3	123.1
August	105.9	117.1	126.5	116.3	115.1	117.8	112.7	117.1	121.2	114.5	118.0	123.3
September	107.9	115.6	129.1	116.3	115.1	120.5	111.8	115.8	120.5	113.2	117.0	122.3
October	109.7	114.8	130.4	116.3	115.0	122.0	110.5	115.6	120.2	111.6	116.6	121.0
November	112.2	114.8	131.6	115.8	114.1	123.2	110.1	115.4	117.9	111.1	116.1	120.2
December	113.0	114.4	131.9	115.8	113.6	123.3	110.7	115.5	117.6	111.2	116.5	119.9
Year	106.0	115.6	124.6	116.3	115.2	118.8	112.2	115.7	119.1	112.9	116.5	120.6

Month.	Beef, salt, corned.			Bread, wheat.			Butter.			Cheese, full cream.		
	1905.	1906.	1907.	1905.	1906.	1907	1905.	1906.	1907.	1905.	1906.	1907.
January	106.9	108.8	112.3	105.7	102.5	103.5	124.1	126.0	138.1	111.8	115.8	120.9
February	107.2	109.0	112.3	105.7	102.3	103.5	126.5	126.1	137.3	111.8	115.6	121.2
March	107.5	109.1	112.7	105.7	102.3	103.9	123.3	124.4	134.5	111.9	116.3	121.2
April	108.0	110.1	113.4	104.9	102.3	103.9	117.7	116.0	129.0	111.6	115.1	120.8
May	108.3	110.8	114.0	104.7	102.3	104.3	108.7	108.3	118.3	109.6	114.1	119.9
June	109.0	111.5	114.5	104.5	102.3	104.5	100.9	103.7	113.2	107.7	112.7	119.4
July	109.2	111.8	114.8	104.5	102.3	104.7	99.4	104.0	113.5	107.0	112.1	119.6
August	108.7	112.2	114.7	104.3	102.3	104.7	101.9	107.5	117.2	107.7	112.9	121.7
September	108.1	111.4	115.1	103.7	102.3	105.1	105.8	114.9	124.1	109.7	114.4	124.9
October	107.5	111.5	115.1	103.5	102.3	105.5	110.3	122.1	132.1	112.3	117.8	128.7
November	107.3	112.1	115.1	103.5	102.3	105.7	115.5	129.3	135.0	114.2	119.4	130.3
December	107.4	112.1	114.8	103.5	102.3	105.7	119.5	137.4	138.7	115.3	119.8	129.7
Year	107.9	110.8	114.1	104.5	102.3	104.5	112.7	118.2	127.6	110.9	115.5	123.2

Month.	Chickens (year or more old), dressed.			Coffee, roasted.			Corn meal.			Eggs, fresh.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	124.7	129.2	132.3	93.2	94.0	94.8	122.7	122.7	126.9	166.2	161.8	169.9
February	127.2	130.4	133.2	93.2	94.2	94.9	117.5	123.2	126.9	161.5	145.8	157.4
March	127.4	131.8	134.0	93.5	94.2	94.9	123.2	123.2	127.4	131.7	124.8	132.4
April	126.5	132.1	133.4	93.4	94.5	94.9	122.7	123.2	127.9	111.3	113.9	114.5
May	123.8	128.9	131.9	93.4	94.5	94.9	122.2	123.2	128.4	104.0	105.9	108.8
June	121.6	127.8	131.1	93.6	94.6	94.9	122.2	123.2	129.5	101.2	105.0	107.1
July	120.1	126.8	129.7	93.6	94.8	94.9	122.2	123.2	131.1	103.9	108.4	110.5
August	120.1	126.2	129.8	93.6	94.9	95.0	121.7	123.2	131.6	111.9	117.2	119.8
September	122.0	126.7	129.9	93.8	95.1	95.2	121.7	123.2	133.7	124.0	132.1	135.8
October	122.6	127.7	130.2	93.8	95.2	95.3	121.7	123.2	136.9	137.5	147.8	153.1
November	123.0	130.3	130.6	93.9	95.3	95.3	121.7	123.2	137.9	155.9	167.2	160.3
December	124.3	131.5	130.6	94.0	95.3	95.3	121.7	123.2	137.9	169.9	180.6	176.9
Year	123.6	129.1	131.4	93.6	94.7	95.0	122.2	123.2	131.6	131.6	134.2	137.7

Month.	Fish, fresh.			Fish, salt.			Flour, wheat.			Lard.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	113.9	117.3	122.9	113.1	115.7	120.4	127.0	111.3	110.3	116.0	121.6	133.3
February	114.2	117.9	123.8	113.0	115.6	120.7	126.6	110.8	110.8	115.9	122.3	133.7
March	111.8	117.5	122.4	113.6	116.2	120.5	125.7	109.8	111.2	115.7	123.1	133.9
April	110.7	117.5	119.9	113.8	116.3	121.2	124.1	109.1	112.9	116.4	124.6	133.9
May	107.2	112.9	117.0	114.4	116.9	121.2	121.8	108.8	115.8	116.3	126.4	134.8
June	106.0	111.9	115.9	113.7	116.5	121.9	121.4	108.5	117.9	116.5	128.0	135.0
July	104.7	111.3	115.8	114.2	116.7	122.1	120.2	107.7	119.3	116.6	129.1	135.5
August	105.3	112.9	117.1	114.1	117.2	122.4	118.6	106.7	119.7	116.8	129.9	135.1
September	107.4	115.3	119.4	114.0	118.0	122.5	115.7	106.0	121.3	117.1	131.2	134.8
October	110.8	117.6	121.8	114.2	118.0	122.9	113.9	106.1	123.8	117.7	132.4	134.3
November	112.8	120.2	124.3	114.2	118.9	123.0	112.6	106.4	124.5	117.2	133.4	133.5
December	114.2	121.9	125.4	114.1	118.5	123.0	111.6	106.2	124.8	117.6	134.0	132.7
Year	109.9	116.2	120.6	113.8	116.8	121.6	119.9	108.1	117.7	116.6	128.0	134.2

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, BY MONTHS, 1905 TO 1907—Concluded.

[Average price for 1890–1899=100.0.]

Month.	Milk, fresh, unskimmed.			Molasses.			Mutton.			Pork, fresh.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	109.0	109.8	114.8	104.3	105.0	106.9	117.0	121.8	128.1	121.5	130.4	138.4
February	109.0	109.8	115.4	104.3	104.9	107.1	117.5	122.2	128.8	122.5	131.4	138.7
March	108.6	109.5	115.6	104.3	105.0	107.2	118.8	122.8	129.6	124.7	133.8	139.8
April	106.4	108.1	114.6	104.3	105.0	107.4	119.2	124.4	129.3	126.0	135.9	141.6
May	104.5	106.4	113.2	104.3	105.3	107.6	118.6	124.4	130.3	127.9	136.8	143.1
June	104.3	106.1	113.4	104.3	105.3	107.6	118.1	125.2	130.6	129.5	138.5	144.9
July	104.0	106.2	113.5	104.3	105.2	107.7	117.3	124.4	130.0	130.4	139.7	145.9
August	103.9	105.9	113.7	104.3	105.2	107.9	116.7	124.0	130.4	131.2	141.5	147.0
September	105.3	107.0	117.0	104.4	105.4	108.0	116.1	124.2	130.3	129.8	141.9	147.2
October	108.7	111.1	121.9	104.7	105.6	108.1	117.5	124.9	131.1	127.2	141.2	145.7
November	109.7	112.6	123.6	104.6	105.9	108.6	118.0	125.5	131.5	124.3	140.0	141.1
December	109.8	113.3	124.2	104.7	105.9	108.5	118.7	125.9	131.1	124.2	139.4	136.9
Year	107.0	108.9	116.8	104.4	105.3	107.7	117.8	124.1	130.1	126.6	137.7	142.5

Month.	Pork, salt, bacon.			Pork, salt, dry or pickled.			Pork, salt, ham.			Potatoes, Irish.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	136.8	143.0	153.3	123.8	129.9	141.0	116.8	122.2	129.2	104.6	114.8	112.5
February	136.9	144.1	153.8	123.8	131.0	141.0	117.1	122.5	129.7	106.4	114.0	113.8
March	137.0	145.5	155.1	124.5	132.5	140.8	117.1	123.5	130.3	105.8	112.1	114.3
April	137.3	148.1	155.6	125.6	133.8	141.1	117.7	125.0	131.1	106.1	115.0	116.3
May	138.3	149.5	157.8	126.9	135.4	141.7	118.2	126.2	131.6	110.4	119.2	124.1
June	139.8	151.2	159.1	127.0	137.5	141.6	119.3	127.7	132.4	114.9	124.1	129.2
July	140.2	153.0	160.0	127.7	138.8	142.5	119.9	128.9	133.1	116.4	124.4	131.9
August	140.5	154.0	160.4	127.7	140.0	142.5	120.5	130.0	133.1	111.6	114.3	126.0
September	140.4	154.2	160.1	126.9	140.6	142.4	120.0	130.7	132.2	106.1	109.1	120.5
October	139.5	154.2	159.7	126.3	141.2	141.1	118.9	129.9	130.4	108.8	106.7	118.9
November	139.1	154.4	157.1	125.7	141.0	139.3	118.1	129.6	128.4	113.7	108.7	119.6
December	139.3	154.8	155.2	125.9	140.9	137.7	118.0	129.6	127.0	115.8	109.1	120.1
Year	138.8	150.4	157.3	126.0	136.9	141.2	118.5	127.2	130.7	110.2	114.4	120.6

Month.	Prunes.			Rice.			Sugar, granulated.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	80.7	84.4	86.9	102.0	105.0	107.6	108.4	98.4	98.7
February	80.7	84.4	87.0	102.0	105.0	107.6	108.8	98.4	98.7
March	80.7	84.5	87.4	101.9	105.2	107.6	108.4	98.4	98.7
April	80.7	84.3	87.4	101.9	105.2	107.9	107.9	98.4	98.9
May	80.9	84.9	87.8	102.0	105.3	108.1	106.9	98.2	99.8
June	80.8	85.1	88.1	102.1	105.5	108.7	105.6	98.2	100.1
July	80.9	85.8	88.5	102.4	105.7	109.1	103.4	98.2	100.3
August	81.1	86.0	88.3	102.7	105.8	109.0	102.5	98.5	100.5
September	81.5	85.8	89.1	103.1	106.4	109.1	101.3	98.2	100.1
October	82.3	85.4	90.2	103.4	106.5	109.1	99.2	98.0	99.9
November	83.0	85.5	90.2	104.3	106.7	109.2	97.8	97.9	99.8
December	83.1	85.6	90.2	104.4	106.7	109.1	97.5	97.7	99.6
Year	81.4	85.1	88.4	102.6	105.7	108.5	103.9	98.2	99.6

Month.	Tea.			Veal.			Vinegar.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	105.7	105.5	105.4	117.7	122.2	124.9	100.0	101.7	103.5
February	105.7	105.5	105.4	117.8	122.4	125.1	100.0	101.8	103.6
March	105.8	105.4	105.4	117.7	122.7	125.1	100.1	102.3	103.5
April	105.8	105.5	105.4	117.0	122.7	124.6	99.5	101.8	103.5
May	105.8	105.5	105.4	116.5	122.6	124.8	100.2	102.6	103.8
June	105.8	105.5	105.2	116.2	122.7	124.3	100.2	102.7	104.0
July	105.8	105.7	105.2	116.6	122.9	124.6	100.1	102.8	104.6
August	105.7	105.8	105.2	117.1	123.4	124.6	100.2	102.8	105.0
September	105.7	105.5	105.2	117.5	123.5	124.8	100.4	102.9	105.4
October	105.6	105.5	105.2	118.8	123.9	125.5	100.6	103.0	105.8
November	105.6	105.5	105.2	119.4	124.5	125.4	100.7	103.1	105.7
December	105.6	105.5	105.2	119.9	124.7	125.8	100.7	103.1	105.7
Year	105.7	105.5	105.3			125.0	100.3	102.6	104.5

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907.

[Average price for 1890-1899=100.0.]

APPLES, EVAPORATED.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	97.0	106.8	112.0	108.8	119.8	109.0
1891	95.0	106.8	116.4	113.8	112.8	110.8
1892	100.5	106.5	98.4	101.1	106.7	99.8
1893	104.4	108.7	110.9	105.8	108.5	107.0
1894	102.5	102.7	111.9	100.2	110.2	105.8
1895	106.1	100.5	93.1	93.6	99.8	97.4
1896	95.0	94.3	83.5	91.1	80.1	88.6
1897	100.5	94.3	80.2	87.6	81.2	87.6
1898	95.0	92.2	100.1	96.7	85.6	95.4
1899	106.1	92.2	101.6	102.1	95.4	99.5
1900	106.1	92.2	88.4	100.5	95.6	95.2
1901	100.8	94.2	96.1	99.8	95.2	96.8
1902	102.7	94.2	109.8	108.3	104.3	104.4
1903	107.5	91.4	101.3	109.1	95.6	100.6
1904	105.9	89.7	99.2	107.4	94.9	99.2
1905	118.3	97.8	108.2	111.5	96.8	106.0
1906	124.6	110.0	115.2	116.9	110.3	115.6
1907	131.4	117.4	124.9	133.7	119.1	124.6

BEANS, DRY.

1890	104.2	98.7	110.0	100 0	92.0	103.3
1891	105.8	97.5	116.3	109.7	87.7	106.2
1892	101.7	97.5	108.9	108.0	92.7	102.4
1893	102.1	97.5	114.1	108.9	100.7	105.0
1894	102.9	102.4	105.5	101.4	100.1	102.6
1895	101.1	102.6	102.4	95.5	98.9	100.5
1896	96.1	99.9	84.5	87.2	95.5	92.7
1897	94.7	100.6	79.9	86.4	104.3	91.5
1898	94.7	102.9	87.0	98.3	113.0	95.9
1899	96.9	104.1	94.2	104.7	115.3	99.7
1900	105.3	105.0	113.7	116.9	122.2	110.0
1901	105.3	118.8	119.2	118.1	127.8	113.9
1902	110.4	119.5	118.6	123.0	131.3	116.8
1903	111.5	113.3	128.9	119.8	141.5	118.1
1904	109.0	112.4	122.9	118.7	141 8	116.8
1905	108.6	111.9	121.8	119.5	141.6	116.3
1906	107.6	111.8	120.4	117.5	140.8	115.2
1907	110.1	114.1	124.1	126.9	142.6	118.8

BEEF, FRESH, ROASTS.

1890	100.2	98.1	99.6	95.3	103.2	99.5
1891	100.3	98.5	100.0	97.0	105.2	100.0
1892	100.2	97.1	100.3	97.0	101.6	99.6
1893	100.3	97.0	99.3	97.5	95.7	99.0
1894	97.9	98.5	98.9	99.4	96.1	98.3
1895	98.2	98.2	99.2	101.5	96.3	98.6
1896	98.9	99.9	98.8	101.9	97.0	99.1
1897	100.0	101.8	100.1	101.8	98.7	100 3
1898	101.5	103.8	101.0	102.5	101.2	101.7
1899	102.6	107.1	102.7	105.0	104.9	103.7
1900	105.4	109.4	105.9	108.0	108.8	106.5
1901	110.0	112.7	110.7	110.2	112.5	110.7
1912	116.9	120.2	117.2	118.5	119.9	118 6
1903	111.1	115.9	113.6	116.7	113.8	113.1
1904	111.8	114.6	112.7	115.6	114.2	112.8
1905	109.8	115.0	113.0	115.8	113.1	112.2
1906	112.4	119.5	116.8	119.9	116.7	115.7
1907	117.0	121.3	120.5	122.5	117.1	119.1

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890–1899=100.0.]

BEEF, FRESH, STEAKS.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division	United States.
1890	99.3	98.9	97.6	95.9	102.6	98.8
1891	99.7	100.0	98.6	96.8	102.7	99.4
1892	99 7	98.1	99.1	96.5	101.7	99.3
1893	100.1	98.3	100.2	99.0	96.0	99.6
1894	98.8	98.1	98.4	99.6	91.9	98.2
1895	99.1	99.6	99.4	99.2	97.3	99.1
1896	99.0	99.1	100.0	101.6	98.8	99.5
1897	100.1	99.0	100.6	101.7	100.3	100.2
1898	101.7	102.2	102.1	102.9	102.6	102.0
1899	102.6	106.8	103.9	106.8	106.2	103.9
1900	104.9	110.5	106.5	109.7	107 1	106.4
1901	109.6	114.4	112.0	111.9	111.0	111.0
1902	118.0	117.7	119 2	122.4	116.1	118.5
1903	111.9	114.0	114.7	112.1	112.1	112.9
1904	113.1	113.5	114.8	111.3	113.4	113.4
1905	111.0	114.4	115.1	112.4	112.9	112.9
1906	114.1	119.1	120.7	114.8	113.8	116.5
1907	119.3	122.8	125.2	116.1	115.1	120.6

BEEF, SALT.

1890	97.9	95.7	96.5	98.8	100.7	97.5
1891	98.5	98.0	96.7	98.8	109.1	98.3
1892	99.2	96.4	100.4	98.8	107.0	99.5
1893	100.5	99.0	100.3	98.8	99.4	100.3
1894	99.3	101.1	97.5	98.8	97.3	98.9
1895	100.4	101.8	97.5	98.8	99.3	99.6
1896	100.0	99.8	99.7	98.8	96.8	99.8
1897	100.4	100.7	102.3	102.6	96.8	100.9
1898	101.6	101.2	103.7	102.6	96.8	102.1
1899	102.1	106.4	105.3	103.0	96.8	103.2
1900	102.3	110.8	106.1	103.5	94.0	103.7
1901	104.8	115.2	108.3	103.5	94.0	106.1
1902	117.1	121.0	115.3	112.5	91.9	116.0
1903	108.0	118.9	110.8	106.5	83.1	108.8
1904	108.0	117.9	109.1	106.5	83.1	108.3
1905	106.3	117.6	110.6	106.1	81.7	107.9
1906	107.3	121.5	114.4	109.1	84.7	110.8
1907	113.1	123.7	116.8	110.7	86.1	114.1

BREAD, WHEAT.

1890	100.4	100.2	100.4	100.0	100.0	100.3
1891	100.4	100.2	100.4	100.0	100.0	100.3
1892	100.3	100.2	100.4	100.0	100.0	100.3
1893	100.2	100.2	99.8	100.0	100.0	100.1
1894	100.0	99.5	99.8	100.0	100.0	99.9
1895	99.8	99.1	99.8	100.0	100.0	99.7
1896	99.9	100.2	99.8	100.0	100.0	99.9
1897	99.9	100.2	100.0	100.0	100.0	100.0
1898	99.5	100.2	100.2	100.0	100.0	99.8
1899	99.5	100.2	99.4	100.0	100.0	99.6
1900	99.4	100.2	100.2	97.6	100.0	99.7
1901	99.1	100.2	99.6	97.6	100.0	99.4
1902	99.6	100.2	99.4	97.6	97.1	99.4
1903	100.3	101.1	100.2	105.2	95.8	100.2
1904	103.4	104.4	104.2	113.7	97.5	103.9
1905	104.9	102.4	104.9	115.8	96.4	104.5
1906	102.9	100.4	101.5	114.9	95.1	102.3
1907	105.3	103.8	102.5	114.7	100.4	104.5

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890–1899=100.0.]

BUTTER.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	99.5	99.0	97.4	102.7	102.5	99.2
1891	107.0	101.8	105.5	105.3	116.9	106.4
1892	107.6	103.5	106.2	103.9	111.3	106.8
1893	110.5	106.6	111.6	104.2	106.0	109.9
1894	101.1	101.3	103.0	101.4	101.5	101.7
1895	96.6	98.6	97.3	99.4	93.7	97.0
1896	92.2	97.1	91.6	96.7	90.8	92.7
1897	93.0	96.4	93.7	95.2	88.0	93.1
1898	94.4	97.5	95.8	95.2	94.0	95.1
1899	97.9	98.2	97.9	96.0	95.2	97.7
1900	101.8	100.0	103.6	93.2	95.1	101.4
1901	102.7	102.5	106.1	101.5	94.6	103.2
1902	112.3	106.7	112.9	110.4	104.0	111.5
1903	110.8	106.7	113.2	109.7	107.2	110.8
1904	108.4	106.1	111.7	111.0	102.9	109.0
1905	113.4	109.2	113.8	114.2	108.4	112.7
1906	118.5	114.7	120.5	118.5	113.6	118.2
1907	125.9	124.6	130.2	127.7	127.6	127.6

CHEESE.

1890	98.7	100.7	97.3	99.3	104.6	98.8
1891	100.1	100.5	99.7	99.7	105.8	100.3
1892	101.7	100.1	101.4	100.5	103.7	101.5
1893	102.2	100.5	101.9	100.5	100.6	101.8
1894	101.9	100.5	102.0	100.3	100.1	101.6
1895	99.2	100.2	99.4	99.0	96.4	99.2
1896	97.7	99.9	97.5	100.1	96.0	97.9
1897	99.5	99.1	98.8	99.2	94.9	99.0
1898	96.9	98.9	98.2	99.5	95.1	97.5
1899	102.1	99.6	103.8	101.9	102.9	102.4
1900	103.7	100.9	105.9	101.3	102.8	103.9
1901	102.7	102.0	104.9	101.4	105.1	103.3
1902	108.1	104.1	107.8	101.2	109.1	107.3
1903	110.6	104.7	109.4	103.4	113.5	109.4
1904	107.5	103.3	107.8	103.2	113.1	107.4
1905	112.0	104.8	111.8	104.1	117.1	110.9
1906	118.8	108.9	116.4	106.7	118.5	115.5
1907	127.7	115.7	123.7	113.1	126.5	123.2

CHICKENS.

1890	102.2	98.3	100.1	99.7	112.2	101.3
1891	105.1	100.0	102.6	100.7	118.4	104.0
1892	105.4	101.4	101.8	97.8	112.5	103.8
1893	105.5	100.9	103.8	100.5	97.5	104.2
1894	98.6	99.1	98.8	97.4	94.4	98.6
1895	98.1	100.1	98.4	98.8	96.1	98.4
1896	96.4	97.7	98.8	97.3	91.5	97.1
1897	93.4	98.3	94.0	95.5	88.2	94.0
1898	95.4	99.0	98.1	103.2	89.6	96.8
1899	99.9	105.2	103.4	108.9	99.4	101.8
1900	97.8	106.1	103.0	112.2	99.9	100.8
1901	99.5	109.7	104.6	120.5	101.4	103.0
1902	112.1	114.4	113.5	122.4	106.9	113.2
1903	116.4	118.5	119.5	139.2	101.5	118.5
1904	119.2	120.3	121.6	141.1	102.1	120.7
1905	119.5	121.2	124.9	148.9	109.3	123.6
1906	125.0	126.6	132.5	149.4	113.6	129.1
1907	128.4	131.1	132.6	155.1	113.3	131.4

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890–1899=100.0.]

COFFEE.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	103.2	104.8	108.6	108.6	111.8	105.4
1891	103.3	104.6	108.1	108.3	109.6	105.2
1892	102.9	103.0	105.7	105.8	104.5	103.8
1893	102.9	103.6	106.6	105.5	107.3	104.8
1894	102.4	103.3	104.4	103.1	106.2	103.3
1895	101.0	102.0	102.6	101.5	102.6	101.7
1896	99.6	99.7	99.7	96.5	100.0	99.6
1897	96.1	95.3	92.3	93.5	90.0	94.6
1898	93.9	92.5	86.5	88.7	84.3	91.1
1899	93.7	91.2	85.2	88.5	83.7	90.5
1900	94.4	90.8	86.2	86.1	86.3	91.1
1901	94.4	88.9	85.6	85.6	86.8	90.7
1902	93.3	85.8	85.2	86.7	85.1	89.6
1903	92.5	85.0	86.2	86.8	85.4	89.3
1904	94.1	89.3	88.8	91.4	87.0	91.8
1905	94.7	91.6	90.9	96.1	87.9	93.6
1906	95.1	94.9	91.2	99.0	89.1	94.7
1907	94.9	94.7	92.0	101.2	88.7	95.0

CORN MEAL.

1890	98.8	97.6	109.7	109.2	110.2	100.0
1891	106.7	104.9	112.2	116.3	119.6	109.7
1892	102.8	106.5	107.3	103.0	118.4	105.2
1893	101.1	98.1	106.2	106.1	107.1	103.1
1894	101.6	99.1	106.1	99.5	98.8	102.2
1895	100.4	103.3	102.4	99.4	95.7	100.8
1896	98.0	97.7	91.2	91.7	87.7	95.0
1897	97.2	97.1	89.9	91.7	84.0	93.7
1898	96.9	96.2	91.7	95.9	89.5	95.0
1899	96.2	100.1	92.6	96.2	88.7	95.1
1900	98.1	99.0	97.3	97.7	88.9	97.4
1901	104.5	110.3	113.1	109.2	94.7	107.1
1902	116.0	121.0	125.5	116.1	111.0	116.8
1903	119.5	118.3	127.6	115.2	113.2	120.7
1904	119.7	118.6	128.6	116.5	115.3	121.5
1905	120.2	117.8	130.2	119.1	114.8	122.2
1906	122.4	119.0	130.2	119.7	113.6	123.2
1907	130.1	126.0	138.3	130.6	120.8	131.6

EGGS.

1890	100.0	101.8	100.7	98.7	108.7	100.6
1891	106.2	105.7	106.1	105.3	111.0	106.9
1892	106.4	106.1	108.2	102.6	107.1	106.8
1893	107.8	106.3	110.2	103.0	106.0	108.1
1894	95.4	98.2	96.9	96.6	97.9	96.3
1895	98.8	99.4	100.1	101.6	97.2	99.3
1896	93.1	94.4	91.9	94.5	90.0	92.8
1897	91.8	93.1	89.5	95.1	92.7	91.4
1898	97.6	95.2	94.2	99.7	92.5	96.2
1899	102.2	99.7	100.0	102.9	96.9	101.1
1900	99.9	101.2	99.9	101.3	93.8	99.9
1901	105.3	106.2	105.9	111.5	98.2	105.7
1902	119.0	120.7	119.1	123.2	109.9	119.1
1903	125.9	126.0	123.3	134.2	118.7	125.3
1904	132.2	134.9	129.8	131.9	121.1	130.9
1905	132.3	137.9	129.2	133.3	123.5	131.6
1906	135.0	142.6	128.3	139.9	128.1	134.2
1907	138.3	143.6	129.8	145.1	136.9	137.7

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890-1899=100.0.]

FISH, FRESH.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	99.3	98.7	99.0	100.0	100.2	99.3
1891	99.9	98.2	99.3	100.0	99.1	99.6
1892	100.8	97.6	99.5	100.0	98.8	100.1
1893	101.2	97.4	99.2	100.0	97.0	100.1
1894	100.4	102.7	98.8	100.0	101.3	100.4
1895	99.5	101.3	99.8	100.0	100.5	99.8
1896	100.2	102.2	100.4	100.0	97.4	100.2
1897	99.4	101.0	100.8	100.0	98.4	99.8
1898	100.0	101.1	101.3	100.0	103.5	100.5
1899	99.4	99.8	101.8	100.0	103.6	100.2
1900	99.7	100.6	101.5	102.9	101.6	100.4
1901	100.1	104.8	102.7	103.1	103.0	101.4
1902	102.8	105.9	105.9	113.8	112.7	105.0
1903	106.6	103.5	108.3	114.4	109.7	107.3
1904	108.3	103.0	109.0	114.4	108.6	107.9
1905	109.4	106.0	112.6	116.6	108.2	109.9
1906	112.3	113.1	122.6	123.0	114.4	116.2
1907	112.9	115.8	128.9	130.1	122.8	120.6

FISH, SALT.

1890	100.7	98.0	102.3	99.2	95.4	100.7
1891	102.2	98.0	103.0	95.4	98.1	101.7
1892	103.8	98.0	100.6	95.4	106.0	102.2
1893	104.9	98.5	102.6	95.4	100.6	103.4
1894	102.6	99.7	100.8	93.5	98.1	101.5
1895	98.7	100.7	99.8	93.5	100.6	98.9
1896	97.8	101.1	96.0	95.3	96.7	97.5
1897	94.3	101.1	94.2	102.8	94.1	95.2
1898	97.2	101.8	98.4	115.4	104.6	98.8
1899	97.9	103.0	102.5	114.0	106.0	100.2
1900	98.6	103.4	99.7	123.2	102.1	99.1
1901	98.6	104.2	100.7	126.3	100.6	100.9
1902	101.0	104.1	100.8	132.4	110.0	102.8
1903	104.1	104.2	114.3	139.1	148.3	108.4
1904	109.3	105.6	116.9	141.5	148.6	111.7
1905	111.7	107.2	120.4	140 6	150.0	113.8
1906	116.5	108.5	123.5	141.8	151.8	116.8
1907	121.0	113.7	128.5	146.8	159.6	121.6

FLOUR, WHEAT.

1890	110.4	105.6	109.5	113.5	107.7	109.7
1891	112.7	106.9	113.2	113.8	114.7	112.5
1892	104.6	101.4	105.3	104.8	114.0	105.1
1893	96.4	98.1	95.0	94.4	95.9	96.1
1894	89.0	92.6	87.8	85.8	85.8	88.7
1895	88.8	92.0	90.1	85.8	83.6	89.0
1896	92.1	96.3	92.1	94.6	92.6	92.7
1897	103.2	101.8	105.5	107.9	109.0	104.3
1898	108.0	106.6	107.4	104.0	106.7	107.4
1899	94.9	97.9	94.0	94.6	90.0	94.6
1900	94.0	97.4	95.4	94.0	87.2	94.3
1901	93.6	98.2	96.4	95.9	86.8	94.4
1902	93.9	97.4	96.9	95.6	91.8	94.9
1903	100.5	101.7	102.4	97.7	104.5	101.2
1904	119.9	118.2	123.2	117.0	114.9	119.9
1905	121.1	119.9	121.0	115.4	116.9	119.9
1906	107.1	108.3	108.0	107.0	111.9	108.1
1907	117.4	115.5	118.7	113.7	122.8	117.7

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890–1899=100.0.]

LARD.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	98.2	97.8	97.9	100.4	98.5	98.2
1891	100.1	99.2	98.9	103.0	102.5	99.8
1892	105.0	101.9	101.4	106.0	106.9	103.6
1893	121.3	118.5	112.5	121.1	117.3	117.9
1894	108.1	105.7	105.0	109.4	108.5	106.9
1895	100.7	97.1	100.7	96.9	101.6	100.1
1896	91.3	93.8	94.5	89.2	90.9	92.5
1897	88.0	91.0	92.8	87.5	87.7	89.8
1898	92.3	95.8	96.3	90.3	92.4	93.9
1899	95.1	99.3	100.0	96.2	93.6	97.1
1900	103.1	108.6	105.8	102.4	99.0	104.4
1901	117.2	122.7	119.0	118.1	107.8	118.1
1902	134.1	140.4	133.4	138.4	120.8	134.3
1903	127.8	134.5	124.0	123.2	118.8	126.7
1904	118.3	121.0	113.7	116.7	115.9	117.3
1905	117.4	119.3	113.3	116.2	116.3	116.6
1906	128.6	133.9	126.1	125.0	123.0	128.0
1907	134.5	143.8	131.5	131.8	127.7	134.2

MILK, FRESH.

1890	100.5	101.5	100.0	100.5	100.7	100.5
1891	100.5	101.5	100.0	100.5	100.7	100.5
1892	100.8	101.5	100.0	98.9	100.7	100.6
1893	100.5	101.5	100.1	98.9	100.7	100.4
1894	100.0	101.5	100.1	98.9	100.7	100.2
1895	100.0	98.9	100.5	99.4	100.8	100.0
1896	99.7	98.1	100.5	101.2	100.8	99.9
1897	99.6	98.4	100.3	101.2	98.9	99.7
1898	99.2	98.4	100.1	101.2	98.1	99.4
1899	99.3	98.5	98.4	99.5	98.1	98.9
1900	100.8	99.1	98.9	99.5	98.1	99.9
1901	102.0	100.6	100.5	99.5	98.1	101.1
1902	104.3	102.1	102.5	103.6	99.2	103.3
1903	106.4	102.8	105.8	107.6	104.6	105.8
1904	107.4	103.1	106.1	108.4	103.3	106.3
1905	107.5	105.5	106.9	110.1	102.3	107.0
1906	109.9	106.9	108.2	111.3	104.8	108.9
1907	115.6	114.4	116.6	121.3	115.4	116.8

MOLASSES.

1890	104.7	101.7	106.0	104.5	104.3	104.7
1891	101.6	100.9	101.6	102.3	104.0	101.7
1892	101.1	100.2	101.4	101.3	102.8	101.2
1893	100.7	99.6	100.7	99.0	102.8	100.6
1894	100.1	100.4	100.6	99.4	102.0	100.3
1895	98.9	100.4	99.3	98.4	97.6	99.0
1896	98.6	99.5	99.5	100.5	92.9	98.7
1897	97.6	99.3	97.9	96.9	95.3	97.7
1898	98.0	98.6	96.7	100.2	99.0	97.9
1899	98.7	99.4	96.4	97.6	99.2	98.2
1900	102.3	98.7	103.0	105.8	100.3	102.2
1901	100.9	97.7	102.3	106.0	101.9	101.3
1902	101.6	97.7	103.8	106.8	102.9	102.1
1903	103.6	95.9	105.8	109.3	103.9	103.8
1904	104.3	95.9	105.0	109.3	104.3	104.0
1905	104.6	96.2	105.8	109.7	104.3	104.4
1906	105.2	99.1	106.5	110.4	104.5	105.3
1907	106.9	102.3	108.5	112.5	108.4	107.7

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890–1899=100.0.]

MUTTON.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	102.3	97.8	100.6	99.1	100.4	100.7
1891	101.4	99.3	100.1	98.7	102.7	100.6
1892	102.2	99.9	100.5	97.9	102.4	101.0
1893	100.5	98.7	101.2	98.4	97.1	99.9
1894	95.2	100.4	99.9	99.3	96.2	97.8
1895	97.3	100.8	99.3	100.1	98.3	98.7
1896	97.7	99.4	99.7	99.9	97.2	98.7
1897	100.3	98.9	98.9	100.6	99.1	99.6
1898	100.6	102.2	98.6	103.8	100.4	100.4
1899	102.5	102.6	100.9	103.8	106.3	102.6
1900	105.7	103.9	104.2	109.3	107.1	105.6
1901	109.2	104.0	110.3	110.5	107.8	109.0
1902	113.3	109.3	116.8	119.9	112.5	114.7
1903	109.9	114.7	114.7	113.4	111.7	112.6
1904	112.9	114.6	116.5	113.9	110.9	114.1
1905	115.2	116.8	122.7	116.3	115.1	117.8
1906	118.3	125.6	131.1	120.8	125.2	124.1
1907	122.7	134.7	134.6	128.9	135.8	130.1

PORK, FRESH.

1890	97.5	94.2	96.0	97.9	100.7	97.0
1891	100.0	97.7	96.6	98.2	100.6	98.7
1892	101.0	98.7	100.4	98.1	101.4	100.5
1893	109.5	105.0	105.3	103.8	97.7	107.0
1894	103.4	100.3	100.2	101.2	98.4	101.8
1895	99.2	102.1	99.4	100.0	101.4	99.7
1896	96.2	100.2	98.0	99.6	99.9	97.4
1897	96.1	97.7	99.3	99.4	99.5	97.6
1898	97.2	100.5	100.7	98.6	96.3	98.6
1899	99.8	103.5	103.9	103.1	104.0	101.7
1900	106.9	107.4	109.6	105.4	107.8	107.7
1901	117.9	118.5	119.4	115.3	110.5	117.9
1902	127.9	132.7	129.6	127.3	117.4	128.3
1903	128.4	130.5	126.3	123.3	114.7	127.0
1904	125.2	127.7	122.5	118.8	116.3	124.0
1905	126.9	129.7	126.9	118.1	121.1	126.6
1906	137.4	141.9	139.1	128.3	129.9	137.7
1907	143.7	147.2	141.9	130.3	137.2	142.5

PORK, SALT, BACON.

1890	95.0	98.0	95.5	94.9	99.6	95.8
1891	96.3	98.2	95.8	95.4	100.7	96.6
1892	98.9	100.3	98.2	100.3	100.9	99.1
1893	109.5	102.9	109.0	112.3	111.6	109.0
1894	104.3	99.3	103.3	104.6	105.5	103.6
1895	98.8	99.9	97.6	99.1	100.2	99.4
1896	97.2	96.5	97.4	94.6	94.3	96.7
1897	98.2	98.9	97.2	96.2	93.4	97.4
1898	99.3	99.3	102.1	101.2	96.4	100.2
1899	102.3	106.6	104.0	101.3	97.5	102.9
1900	109.3	108.7	111.6	110.2	104.0	109.7
1901	120.3	119.2	124.4	122.0	111.7	121.0
1902	134.6	132.6	137.8	141.6	127.3	135.6
1903	137.5	134.6	141.2	152.5	137.5	139.8
1904	133.8	131.8	140.6	151.2	137.4	137.9
1905	134.2	131.7	142.5	151.4	139.2	138.8
1906	145.9	144.5	155.8	165.8	144.2	150.4
1907	151.4	151.6	161.3	176.8	153.7	157.3

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890–1899=100.0.]

PORK, SALT, DRY OR PICKLED.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	94.9	95.8	96.2	87.3	111.1	95.3
1891	98.9	97.1	99.8	94.2	111.1	98.9
1892	100.7	96.7	101.2	99.4	111.1	100.5
1893	109.9	99.5	110.5	107.1	111.1	108.7
1894	103.9	97.1	104.1	106.5	111.1	103.4
1895	100.2	99.0	96.8	107.3	106.5	99.2
1896	96.5	100.7	92.9	98.1	83.3	95.5
1897	97.0	100.1	97.0	97.8	83.3	97.3
1898	98.1	105.9	98.7	97.5	83.3	99.1
1899	99.3	108.1	102.8	104.9	87.9	101.8
1900	106.1	113.9	107.3	113.4	94.9	107.7
1901	112.7	129.9	118.5	129.2	83.3	117.5
1902	129.2	147.7	131.4	145.2	83.3	132.5
1903	124.7	144.8	128.6	142.1	83.3	129.0
1904	120.5	139.4	125.6	140.6	83.4	125.8
1905	120.5	141.2	126.1	138.8	83.3	126.0
1906	130.0	157.8	138.4	144.1	89.8	136.9
1907	135.0	159.8	140.6	153.1	94.3	141.2

PORK, SALT, HAM.

1890	98.7	98.0	99.0	96.2	102.5	98.7
1891	98.6	99.3	99.7	98.6	104.0	99.3
1892	101.6	100.5	102.3	102.6	104.8	101.9
1893	110.1	105.3	110.8	103.6	112.8	109.3
1894	102.4	100.4	101.3	102.1	103.4	101.9
1895	98.3	99.7	99.3	100.2	96.6	98.8
1896	97.8	99.4	97.4	96.6	94.4	97.6
1897	98.5	99.2	97.4	99.1	94.9	98.2
1898	94.4	98.8	94.0	100.2	90.6	95.1
1899	99.4	99.4	98.9	100.9	95.9	99.2
1900	105.6	102.7	106.3	108.4	102.7	105.3
1901	110.8	107.6	111.6	112.1	103.9	110.2
1902	119.1	114.4	122.8	123.6	114.9	119.4
1903	121.6	118.1	122.0	128.3	116.2	121.3
1904	118.7	114.0	118.8	127.3	114.5	118.4
1905	118.0	114.7	119.9	126.4	114.8	118.5
1906	128.3	123.5	128.2	136.0	119.6	127.2
1907	130.0	132.0	128.5	141.6	127.4	130.7

POTATOES, IRISH.

1890	109.4	105.0	109.2	106.5	123.9	109.3
1891	114.2	112.6	123.1	118.5	110.9	116.6
1892	96.7	94.3	95.7	89.5	95.7	95.7
1893	110.5	112.1	116.9	111.2	106.3	112 3
1894	100.5	101.3	109.0	101.9	89.8	102.6
1895	90.7	94.8	93.8	92.8	85.0	91.8
1896	79.3	79.0	70.0	79.6	86.2	77.0
1897	95.8	93.9	87.2	97.6	87.0	93.0
1898	106.6	107.7	104.3	104.0	92.5	105.4
1899	96.1	99.3	90.6	98.2	122.7	98.1
1900	94.0	98.1	89.6	93.9	99.8	93.5
1901	113.8	114.6	123.7	116.0	116.2	116.8
1902	114.3	115.2	124.5	106.8	120.2	117.0
1903	113.4	109.8	121.4	111.0	106.6	114.8
1904	121.0	114.4	123.7	115.0	125.7	121.3
1905	107.8	104.2	113.9	110.1	110.0	110.2
1906	111.8	109.7	117.0	111 2	119.4	114.4
1907	115.5	113.4	122.5	120.7	135.1	120.6

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Continued.

[Average price for 1890-1899=100.0.]

PRUNES.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	120.4	109.4	116.5	110.5	118.0	116.8
1891	118.2	109.4	118.8	109.7	119.8	116.5
1892	114.9	109.4	113.8	110.6	115.1	113.5
1893	117.0	109.4	119.3	112.7	109.7	115.6
1894	98.9	109.4	100.3	101.5	101.4	100.9
1895	92.3	104.0	92.7	93.6	98.0	94.2
1896	85.9	90.1	84.9	89.0	89.5	86.8
1897	83.3	86.3	84.3	88.5	81.3	84.3
1898	85.5	86.3	85.6	92.4	83.0	86.3
1899	83.6	86.3	83.7	91.5	85.7	85.1
1900	81.7	86.3	82.1	88.3	80.2	83.0
1901	81.7	86.3	79.2	91.5	79.1	82.6
1902	80.0	86.3	81.3	98.0	81.2	83.4
1903	82.4	86.3	77.1	81.4	69.6	80.2
1904	81.5	83.9	76.6	82.7	69.0	79.6
1905	81.6	84.5	79.0	86.3	73.0	81.4
1906	83.8	89.4	81.1	89.0	86.2	85.1
1907	87.0	90.7	84.2	96.4	88.5	88.4

RICE.

1890	101.2	100.5	101.8	99.7	102.5	101.3
1891	102.6	100.9	102.9	101.6	105.8	102.5
1892	101.4	101.2	100.9	99.8	104.0	101.3
1893	98.1	100.4	98.1	98.1	97.6	98.4
1894	98.5	100.3	99.6	99.8	96.1	99.0
1895	98.9	99.1	98.8	100.2	96.0	98.8
1896	96.7	98.1	96.7	97.7	91.6	96.7
1897	98.1	98.6	97.7	98.8	96.1	97.9
1898	101.8	100.3	101.5	102.3	104.6	101.7
1899	102.7	100.5	102.0	103.7	105.7	102.4
1900	102.7	102.0	101.1	104.5	106.3	102.4
1901	102.9	103.3	103.4	107.6	105.6	103.5
1902	102.3	104.1	104.3	106.0	107.3	103.5
1903	103.7	104.2	103.3	107.0	104.2	103.9
1904	102.0	102.6	100.1	104.6	100.7	101.6
1905	102.7	103.7	102.5	103.6	101.2	102.6
1906	105.2	108.4	105.9	104.6	105.5	105.7
1907	108.7	112.2	107.4	107.6	108.7	108.5

SUGAR.

1890	119.9	115.8	116.3	121.4	122.6	118.6
1891	101.9	103.1	102.8	105.5	109.0	102.7
1892	94.8	99.4	96.4	99.7	99.9	96.2
1893	101.5	103.7	100.9	100.1	102.9	101.5
1894	92.4	97.1	94.2	96.6	97.5	93.8
1895	91.4	92.3	92.2	93.5	90.1	91.8
1896	97.1	94.1	97.2	96.0	91.2	96.6
1897	96.2	93.1	96.3	94.7	92.9	95.7
1898	102.4	99.8	101.1	95.7	99.4	101.3
1899	102.2	101.7	102.5	96.8	94.7	101.7
1900	106.2	105.9	104.3	98.2	97.5	104.9
1901	104.2	104.6	102.5	94.2	96.3	103.0
1902	97.0	97.3	96.3	90.7	81.2	96.0
1903	97.2	97.4	95.1	92.1	90.9	96.1
1904	102.1	99.8	101.7	98.9	101.0	101.9
1905	106.1	103.9	102.1	99.4	100.5	103.0
1906	99.9	97.6	96.3	95.0	95.1	98.2
1907	101.5	99.2	97.8	96.2	96.8	99.6

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TABLE III.—RELATIVE RETAIL PRICES OF FOOD, 1890 TO 1907—Concluded.

[Average price for 1890-1899=100.0.]

TEA.

Year.	North Atlantic division.	South Atlantic division.	North Central division.	South Central division.	Western division.	United States.
1890	100.0	100.6	99.8	98.6	101.1	100.0
1891	100.3	100.8	100.7	99.0	99.8	100.4
1892	100.2	100.8	100.6	99.5	97.4	100.2
1893	100.1	100.8	100.3	99.8	98.1	100.1
1894	99.2	100.2	96.9	99.1	98.2	98.7
1895	99.1	100.2	96.3	99.6	97.2	98.5
1896	99.0	99.1	98.1	99.9	97.5	98.8
1897	98.7	99.1	97.5	100.1	97.9	98.5
1898	100.6	99.1	101.3	100.8	101.7	100.7
1899	103.1	99.3	108.5	103.6	111.0	104.4
1900	103.5	99.7	111.1	105.8	110.8	105.5
1901	104.0	100.2	114.1	107.5	113.2	106.7
1902	104.3	100.5	114.8	108.8	113.7	107.2
1903	103.5	98.1	112.9	107.5	114.4	106.0
1904	103.5	98.1	112.0	107.5	114.9	105.8
1905	103.2	97.9	111.9	107.1	116.2	105.7
1906	102.0	98.1	112.0	108.2	116.2	105.5
1907	101.7	98.1	111.9	109.2	114.3	105.3

VEAL.

1890	99.9	96.8	97.2	97.0	105.8	98.8
1891	100.5	99.8	97.6	99.3	104.5	99.6
1892	100.2	101.5	98.7	98.5	104.0	100.0
1893	99.7	101.9	100.8	99.3	96.2	100.0
1894	98.4	100.3	99.9	99.3	92.5	98.7
1895	98.1	98.9	100.0	99.3	92.9	98.5
1896	99.7	99.7	99.7	101.5	96.5	99.5
1897	99.1	100.1	100 1	101.8	99.1	99.9
1898	101.2	99.6	101.0	101.8	103.6	101.2
1899	103.1	101.4	105.0	102.2	105.0	103.7
1900	104.1	103.9	106.3	101.9	106.1	104.9
1901	107.5	106.5	111.0	106.6	109.1	108.8
1902	117.8	110.0	117.0	112.1	110.7	115.2
1903	119.7	110.0	116.3	106.0	111.8	114.9
1904	120.5	110.6	116.8	105.8	113.0	115.5
1905	122.4	112.9	120.4	107.2	113.2	117.7
1906	126.4	122.0	127.5	112.7	116.2	123.2
1907	128.0	124.9	129.2	113.1	119.2	125.0

VINEGAR.

1890	103.7	104.2	103.6	98.2	99.6	102.9
1891	108.4	103.0	105.6	102.1	99.6	105.5
1892	104.0	98.1	105.1	101.7	99.6	102.7
1893	97.6	98.7	101.9	101.8	99.6	99.5
1894	98.4	99.3	101.5	101.5	99.6	99.8
1895	97.6	99.3	101.2	97.9	99.6	98.9
1896	97.2	99.3	96.0	95.7	99.6	97.2
1897	97.3	99.3	96.0	96.7	99.6	97.4
1898	97.5	99.3	94.4	102.2	101.1	97.9
1899	98.3	99.3	94.8	101.8	102.6	98.3
1900	97.4	99.3	96.0	104.6	102.6	98.5
1901	96.8	99.3	95.4	110.0	104.7	98.9
1902	96.3	99.3	98.1	107.1	111.9	99.5
1903	96.3	99.3	96.7	106.9	111.9	99.1
1904	95.8	98.6	96.5	107.3	111.9	98.9
1905	98.6	99.5	98.1	107.3	110.3	100.3
1906	104.3	100.5	99.5	107.4	111.7	102.6
1907	106.7	101.1	102.4	110.9	111.7	104.5

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COMPENSATION FOR INJURIES OF ARTISANS AND LABORERS IN THE SERVICE OF THE UNITED STATES.

The Congress of the United States, at its last session, passed an act of unusual importance to labor, under the title of "An act granting to certain employees of the United States the right to receive from it compensation for injuries sustained in the course of their employment." This act, as its title indicates, is purely a compensation act, and assures to the injured employee a payment during disability (not exceeding one year) equal to the amount of his wages if he had continued to be employed. Questions of the assumption of risk and of the negligence of fellow-servants are eliminated, the only conditions being that the injury be received in the course of employment, that the resultant disability continue for more than fifteen days, and that the injury be not due to the negligence or misconduct of the injured employee. The act is thus of a nature entirely different from a liability law, which would only grant a right of action and would necessitate a suit for the determination of the rights of the claimant.

The idea of compensation had already received recognition in the case of keepers or members of crews of life-saving or lifeboat stations, who, if disabled by wound or injury received or disease contracted in the line of duty, may receive full pay during one year, and, on approval by the Secretary of the Treasury, during a part or all of a second year;[a] also in the case of railway mail clerks injured while on duty, who continue to receive pay during one year if the disability lasts so long. The personal representatives of railway mail clerks killed while on duty, or dying within one year thereafter as a result of injury received while on duty, receive the fixed sum of $1,000.[b]

The new law is of more general application and applies to persons employed by the Government as artisans or laborers in the following services: Government manufacturing establishments, arsenals, navy-yards, river and harbor construction, construction of fortifications, and hazardous employment in the Reclamation Service and under

[a] Act of May 4, 1882, 22 Stat., 57.

[b] Act of May 27, 1908, 35 Stat., 413. Similar provisions are found in the appropriation acts of preceding years.

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the Isthmian Canal Commission. The number of employees affected is roughly estimated at about 75,000. The act applies only to injuries received on or after August 1, 1908, the date of its coming into effect. Should the employee be killed by an accident, or die within one year as the result thereof, and leave a husband, widow, children under 16 years of age, or dependent parents, such relatives are entitled to the same amount of compensation as the injured employee would have received had he survived. The text of the law in full is given on pages 415 and 416.

The administration of the act is intrusted to the Secretary of Commerce and Labor. All questions of negligence or misconduct are to be determined by him, and in case of death from injury the distribution of the compensation among the dependent relatives entitled to it must be made according to his orders. Cases of injury to employees coming under this act must be reported to the Secretary of Commerce and Labor, and compensation may be paid only when approved by him.

No compensation will be paid either for injury or for death unless the persons entitled to such compensation make application for the same. This application must be made by the injured employee or, in case of his death, by his dependents, and forwarded by the official superior of the injured employee, accompanied by a physician's certificate, through the regular official channels to the Secretary of Commerce and Labor. The Secretary is authorized by the act to demand such additional information, or order such investigation, as is necessary for the proper administration of the law.

Regulations have been prepared by the Secretary of Commerce and Labor for the guidance of officials and employees in the Government Service, and the necessary forms and blanks have been prepared, printed, and distributed among the Government offices throughout the country where persons are employed who come under the provisions of this act.

According to these regulations, reports of injuries must be made by the official superior of the employee to the Secretary of Commerce and Labor not later than the second day after the accident. Application for compensation must be made as soon as possible after the first fifteen days of disability. If the application is approved, the compensation will be paid during disability, but for a period not exceeding six months; at the end of six months, the disability continuing, the injured person must make application for reexamination by a physician provided by the Secretary of Commerce and Labor, and after this examination has been made and reported a new approval by the Secretary for further payment of compensation is necessary. This procedure is demanded by section 5 of the act. The only other condition required is a presentation to the disbursing

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officer on each pay day of a physician's certificate as to the disability of the injured person, approved by the official superior.

Applications of dependents for compensation in case of the death of an employee from accidental injury must be made within ninety days after such death.

The records of the operation of this act will furnish valuable material for statistics of accidents, which, for this country, are quite meager. In order to make the statistics more complete and valuable, reports of all accidental injuries to Government civilian employees, regardless of the application of this act, have been requested from all Government establishments and offices. As the number of United States Government employees exceeds 300,000, these statistics will prove of great scientific value and practical use in the future.

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COST OF LIVING OF THE WORKING CLASSES IN THE PRINCIPAL INDUSTRIAL TOWNS OF GREAT BRITAIN.

Under the above title a report was presented to Parliament in December, 1907, by the Labor Department of the British Board of Trade, showing the results of investigations as to the comparative level of rents of working-class dwellings, of the prices commonly paid by the working classes for meat, other food commodities, and fuel, and of the standard rates of wages prevailing in certain selected occupations in 77 industrial towns in England and Wales, 11 in Scotland, and 6 in Ireland, or 94 towns in all, in the month of October, 1905.

As a basis of comparison, the levels of rents, prices, and rates of wages in the middle zone of London were taken as standards (i. e., the area lying between the outer suburbs and the central portions), and index numbers were calculated for each of these items in every town, so as to afford an indication of the relative levels of the towns, in relation both to London and to each other. For Scotland and Ireland supplementary standards were obtained by the adoption of Edinburgh and Dublin, respectively, as bases, so that for the towns of each of those two countries a twofold comparison has been made—one with Edinburgh or Dublin and one with London. In order to obtain a series of index numbers which should indicate the relative levels for each town of that part of the cost of living which consists of the expenditure on rent, food, and fuel, the two index numbers have in each case been combined. For that purpose, however, as the expenditure on food by a working-class family is greater than that on rent, rent has been given a weight of 1 and prices a weight of 4 in the construction of the combined index numbers.

In addition to the information obtained from the working classes as to their housing, much was also furnished in regard to rents by house and estate agents and by individual owners of house property. Large numbers of returns as to prices of groceries, meat, and fuel were furnished by representative tradesmen in possession of a working-class patronage; also by cooperative societies and by the large "multiple" firms, which have branches in many of the towns. The returns of wages were readily supplied by many employers. They dealt in the main only with the rates of wages in certain selected occupations, in which standard rates prevail, and which are carried on in almost all industrial towns, viz, the building, engineering (or mechanical), furnishing, and printing trades. While information was in many cases acquired as to rates of wages in other occupations,

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it must be remembered that the present report does not give the results of an inquiry into earnings, but simply a comparison of the standard rates of wages in certain comparable occupations present in practically all the towns investigated.

Incidentally a large amount of information was obtained as to the actual housing conditions which prevail in the industrial towns of the United Kingdom and as to other matters of importance in town life, such as overcrowding, transportation of workmen to and from work, and public health.

RENTS OF WORKING-CLASS DWELLINGS.

Considering rents generally, a remarkably high level prevails in London as compared with the rest of the country. If London be excluded, the variation of rents in the industrial towns of England and Wales is not very great. In Scotland the rents in the capital are only slightly higher than those in the other towns; but, in Ireland, Dublin shows a markedly higher level than the rest of the country.

ENGLAND AND WALES.

In the 77 towns investigated there were great variations in the local standard of housing accommodation; but the tenements of four or five rooms (self-contained two-storied dwellings, possessing four or five rooms and a separate scullery) are the most predominant types of housing accommodation in England and Wales, and may be taken as the typical dwellings of the English working classes. It should be noted that the rents given include in every case the local rates or taxes, since these are in practically all cases included in the tenants' weekly payments.

As considerable differences exist in rentals, density of population, and the chief types of working-class dwellings between the various districts of London, a study of these differences suggested the division of the area into three zones, viz, the central, middle, and outer. The rents of the middle zone have been selected as the base (100) of the index numbers of the various parts of London as well as of the English and Welsh towns.

The following table shows the range of predominant weekly rents for the several kinds of tenements in each of the three zones of London, in October, 1905:

WEEKLY RENTS IN CENTRAL, MIDDLE, AND OUTER ZONES OF LONDON, OCTOBER, 1905.

Zone.	Predominant weekly rents, including rates, for—						Rent index number.
	1 room.	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	
Central	$0.73–$1.46	$1.34–$2.07	$1.70–$2.55	.....	.....	.....	118
Middle	.61– 1.22	1.09– 1.83	1.46– 2.19	$1.83–$2.55	$2.19–$3.16	$2.55–$3.77	100
Outer	.....	.....	1.22– 1.95	1.46– 2.31	1.83– 2.80	2.19– 3.16	86

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In the table following is shown the predominant range of weekly rents for tenements of various sizes in the towns of England and Wales as a whole, in October, 1905:

WEEKLY RENTS IN TOWNS OF ENGLAND AND WALES, OCTOBER, 1905.

Number of rooms per tenement, excluding scullieries.	Number of towns to which figures relate.(a)	Predominant range of weekly rents, including rates, Oct., 1905.	Number of towns in which the mean rent is—		
			Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
Two rooms	19	$0.73–$0.85	10	4	5
Three rooms	44	.91– 1.09	25	8	11
Four rooms	73	1.09– 1.34	45	15	13
Five rooms	68	1.34– 1.58	43	12	13
Six rooms	30	1.58– 1.89	17	6	7

(a) In 4 instances the returns from 2 towns were combined, viz, Liverpool and Bootle, Manchester and Salford, Plymouth and Devonport, and Chatham and Gillingham.

Of the interesting facts shown in the above table, one is the prevalence of the four and five room types of working-class tenements. The former are found in every one of the towns included in the inquiry and the latter in all except a very few. The three-room type appears to be fairly common, while the six-room type occurs in a considerable number of towns. Another fact is the uniformity of rents on the whole, as shown by the number of towns in which the mean rents for each class of tenements fall within the predominant range for the same class of tenements in the country as a whole, and by the comparative smallness of the predominant range of rents for each class of tenements.

A comparison of the predominant range of rents given in the above table with those shown for the middle zone of London reveals the extent to which rents in the metropolis exceed those which prevail elsewhere. This contrast is brought out in the following brief table:

WEEKLY RENTS IN LONDON AND IN THE PROVINCIAL TOWNS COMPARED.

Area.	Predominant range of weekly rents, including rates, for—				
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.
London (middle zone)	$1.09–$1.83	$1.46–$2.19	$1.83–$2.55	$2.19–$3.16	$2.55–$3.77
Provincial towns	.73– .85	.91– 1.09	1.09– 1.34	1.34– 1.58	1.58– 1.89

While the mean rent for two rooms in London is 6s. ($1.46), in the provincial towns it is only 3s. 3d. ($0.79). For three rooms in London the mean rent is 7s. 6d. ($1.83) as compared with 4s. 1½d. ($1.00) in the provincial towns. The corresponding figures for four rooms are

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9s. ($2.19) and 5s. ($1.22), respectively; for five rooms, 11s. ($2.68) and 6s. ($1.46), and for six rooms, 13s. ($3.16) and 7s. 1½d. ($1.73).

In the table following is shown the predominant range of weekly rents for tenements of various sizes in 12 provincial towns of England and Wales, which at the census of 1901 had a population of over 200,000:

WEEKLY RENTS IN 12 PROVINCIAL TOWNS.

Town.	Predominant range of weekly rents, including rates, for—				
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.
Birmingham		$0.85-$1.22	$1.22-$1.46	$1.34-$1.83	$1.58-$2.19
Bradford	[a] $0.73-$0.97	[a] .97- 1.22	[a] .97- 1.34 [b] 1.22- 1.58	[b] 1.40- 1.58 [c] 1.46- 1.83	
Bristol			.97- 1.22	1.22- 1.58	1.58- 2.07
Hull		.73- .97	.85- 1.22	1.10- 1.50	1.40- 1.70
Leeds	[a] .73- .85	[a] .85- 1.10	1.10- 1.46	[a] 1.22- 1.58 [d] 1.58- 1.70	
Leicester			.85- 1.22	1.10- 1.46	1.34- 1.70
Liverpool [e]		1.22- 1.46	1.22- 1.58	1.46- 1.95	1.70- 2.07
Manchester and Salford		1.10- 1.34	1.22- 1.46	1.46- 1.70	
Newcastle-on-Tyne	.97- 1.28	1.28- 1.58	1.46- 1.70		
Nottingham		.85- 1.16	1.10- 1.28	1.22- 1.70	1.58- 2.19
Sheffield	.61- .91	.91- 1.10	1.10- 1.34	1.34- 1.64	

[a] Back-to-back houses. [b] Small through houses. [c] Larger through houses. [d] Through houses. [e] Including Bootle.

In the following table index numbers are given showing the relative rent level in each of the towns canvassed as compared with London, the predominant rents in the metropolis being taken as the base (100):

RELATIVE RENT LEVEL OF ENGLISH AND WELSH TOWNS AS COMPARED WITH LONDON.

Town.	Index number.	Town.	Index number.	Town.	Index number.
London	100	Carlisle	58	Derby	51
Croydon	81	Darlington	58	Hanley	51
Plymouth and Devonport	81	Grimsby	58	Stockport	51
Newcastle-on-Tyne	76	Reading	58	Blackburn	50
Birkenhead	70	Keighley	57	Chester	50
Jarrow	68	Normanton	57	Merthyr-Tydfil	50
Swansea	68	Portsmouth	57	Warrington	50
Gateshead	66	Dover	56	Wigan	50
Liverpool and Bootle	65	Leeds	56	Bedford	49
Southampton	65	Nottingham	56	Chatham and Gillingham	49
Huddersfield	64	St. Helens	56	Coventry	49
Barrow-in-Furness	63	Worcester	56	Northampton	49
Newport (Monmouth)	63	Halifax	55	Crewe	48
Manchester and Salford	62	Sheffield	55	Gloucester	48
Luton	61	Lincoln	54	Hull	48
South Shields	61	Stockton-on-Tees	54	Leicester	48
Oldham	60	Stoke-on-Trent	54	Norwich	48
Birmingham	59	Bolton	53	Preston	48
Bradford	59	Bristol	53	Taunton	47
Cardiff	59	Burnley	53	Ipswich	44
Middlesborough	59	Castleford	53	Kidderminster	43
Sheerness	59	Wolverhampton	53	Walsall	43
Sunderland	59	York	53	Peterborough	39
Swindon	59	Burton-on-Trent	52	Macclesfield	32
		Rochdale	52		

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SCOTLAND.

There is little in common between the working-class houses in Scotland and those in England. The typical residence of the workingman, whether laborer or skilled mechanic, is, in England, a cottage of three, four, or five rooms, while in Scotland it is a flat of one, two, or three rooms. As regards the flats, the rooms are generally much larger than those in the English cottages. The difference is reflected in the appearance of the towns. In an ordinary English industrial town street after street of two-story cottages built on an almost uniform plan are met with, while in Scotland the cottage disappears and its place is taken by blocks of flats of two, three, and four stories. Generally each block of flats has a common washhouse and drying ground.

The following table gives the predominant range of weekly rents in October, 1905, for each of the three principal types of houses which are largely represented in the 11 towns included in this inquiry:

WEEKLY RENTS IN TOWNS OF SCOTLAND, OCTOBER, 1905.

Number of rooms per house.	Number of towns to which figures relate.(a)	Predominant range of weekly rents, including rates, Oct., 1905.	Number of towns in which the mean rent is—		
			Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
One room	10	$0.49–$0.61	6	2	2
Two rooms	10	.93– 1.03	7	2	1
Three rooms	10	1.26– 1.56	6	2	2

a Leith is combined with Edinburgh.

The rent index numbers given below show the relative level of rents in each of the Scottish towns included, the rents in Edinburgh being taken as the base (100):

RELATIVE RENT LEVEL OF SPECIFIED SCOTTISH TOWNS AS COMPARED WITH EDINBURGH.

Town.	Index number.	Town.	Index number.
Edinburgh (and Leith)	100	Paisley	90
Glasgow	99	Kilmarnock	86
Greenock	92	Aberdeen	84
Dundee	92	Perth	76
Falkirk	91	Galashiels	69

IRELAND.

The housing conditions in the Irish towns investigated are strikingly different from those prevalent in Scotland, but correspond in the main to English conditions. The prevailing types of tenements, outside Dublin, are cottages of one or two stories containing two,

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three, four, or five rooms. In Dublin, however, the conditions are totally distinct. The bulk of the working classes are housed in tenement houses, which are of a different type from the block flats in the Scottish towns. These tenements consist for the most part of large houses once occupied by the wealthier classes, none of the tenements being self-contained. Situated mostly in the outer parts of the city, however, are a number of better-class tenements and houses.

The following table gives the predominant range of weekly rents in October, 1905, for each of the principal types of working-class accommodation:

WEEKLY RENTS IN TOWNS OF IRELAND, OCTOBER, 1905.

Number of rooms per tenement, excluding sculleries.	Number of towns to which figures relate.	Predominant range of weekly rents, including rates. Oct., 1905.	Number of towns in which the mean rent is—		
			Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
One room	5	$0.37–$0.61	4	.....	1
Two rooms	6	.61– .85	5	.....	1
Three rooms	6	.97– 1.22	3	1	2
Four rooms	6	1.34– 1.64	3	1	2

Dublin is included in the above table, and in every case its mean rent is above the upper limit of the predominant range, the rents in the capital being much higher than the rents in the rest of Ireland.

The rent index numbers given below show the relative level of rents in each of the Irish towns included, the rents in Dublin being taken as the base (100):

RELATIVE RENT LEVEL OF SPECIFIED IRISH TOWNS AS COMPARED WITH DUBLIN.

Town.	Index number.	Town.	Index number.
Dublin	100	Belfast	61
Limerick	69	Londonderry	54
Cork	66	Waterford	53

RETAIL PRICES.

The range of prices in the various towns investigated, as shown by price index numbers, is much less than that of rents, but at the same time is sufficiently large to require consideration. It must be remembered also that the prices quoted for any given town, and serving as the basis for the index number, are not necessarily the minimum prices at which the different commodities could be obtained, but the prices most usually paid by the working classes and referred to in this inquiry as the predominant prices. Even when a range of prices

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is given, the lower limit may not be the minimum price prevalent in the locality; the range represents rather a group of prices, all of which relate to popular qualities of commodities. The figures given form therefore no exact guide to the minimum possible cost of living, and the variations shown to exist between town and town arise not only from differences in the cost of exactly similar articles, but also from variations in the demand for different qualities of the same article. In every case the tradesman making the return was asked to state the prices in October, 1905, for those qualities of articles which in his experience were chiefly favored by the working classes in his district, and in each town a sufficient number of returns was obtained to establish for that center the predominant prices or ranges of price paid by working-class customers.

ENGLAND AND WALES.

The following table (which is exclusive of London) presents the predominant range of retail prices of the principal commodities in England and Wales as a whole, and shows that there is in regard to most of the commodities very little variation in price between one district and another:

RETAIL PRICES OF COMMODITIES IN TOWNS OF ENGLAND AND WALES, OCTOBER, 1905.

Commodity.	Unit.	Number of towns included.	Predominant range of retail prices, Oct., 1905.	Towns in which the mean predominant price is—		
				Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
Tea	1 lb.	72	$0.32–$0.41	65	.....	7
Sugar, granulated	1 lb.	72	.64	50	2	20
Bacon	1 lb.	72	.14– .18	60	9	3
Cheese, American cheddar	1 lb.	68	.14	37	14	17
Butter:						
Colonial or foreign	1 lb.	63	.24– .26	56	2	5
Danish	1 lb.	71	.28	56	7	8
Potatoes	7 lbs.	72	.05– .07	57	11	4
Flour	7 lbs.	72	.16– .20	60	8	4
Bread	4 lbs.	70	.09– .11	53	7	10
Milk	1 qt.	72	.06– .08	70	2	.....
Coal	1 cwt.	72	.19– .24	40	15	17
Meat, British or home killed:						
Beef	1 lb.	72	.15– .17	50	10	12
Mutton	1 lb.	72	.15– .18	71	1	.....
Pork	1 lb.	72	.15– .17	63	5	4
Meat, foreign or colonial:						
Beef	1 lb.	71	.10– .12	59	4	8
Mutton	1 lb.	71	.08– .10	62	6	3

In the following table is shown the predominant range of retail prices of the principal commodities in 7 selected towns of England, which at the census of 1901 had a population of over 300,000:

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RETAIL PRICES OF COMMODITIES IN 7 SELECTED TOWNS OF ENGLAND, OCTOBER, 1905.

Commodity.	Unit.	Birmingham.	Bristol.	Leeds.	Liverpool. [a]	London.	Manchester. [b]	Sheffield.
Tea	1 lb.	$0.32–$0.37	$0.32–$0.37	$0.37	$0.32	$0.33	$0.32	$0.32–$0.41
Sugar, granulated	1 lb.	.04	.04	.04	.04	.04	.04	.04–.04½
Bacon, back	1 lb.	.16–.20	.14–.18	$0.16–.20	$0.14–.16	.21	$0.14–.18	[c].12–.16
Eggs	1 doz.	.24	.24	.18	.18–.21	.19	.24–.29	.18
Cheese, American cheddar	1 lb.	.14	.12–.14	.14–.16	.14–.16	.14	.14	[d].14–.16
Butter:								
Colonial	1 lb.	.24–.28	.24–.26	.24	.....	.24	.24–.26	.24
Irish	1 lb.	.24–.28	.24–.26	.24–.26	.26–.28	.....	.24	.26–.28
Danish	1 lb.	.28	.24–.26	.28	.28–.30	.28	.28	.28–.30
Potatoes	7 lbs.	.05	.06	.06–.07	.04–.06	.07	.06–.07	.06–.09
Flour	7 lbs.	.18–.22	.21	.16–.18	.17	.20	.18	.16
Bread	4 lbs.	.08–.11	.11	.10	.09	.10	.09	.10
Milk	1 qt.	.07	.06	.06–.07	.07–.08	.08	.06–.07	.06–.08
Coal	1 cwt.	.16–.20	.24	.17–.21	.18–.20	.29	.16–.20	.14–.20
Oil, paraffin	1 gal.	.12	.14	.14–.16	.16	.13	.16	.14–.16
Beef, British or home killed:								
Ribs	1 lb.	.15–.17	.14–.16	.16–.18	.16–.18	.18	.16–.20	.16–.18
Silverside	1 lb.	.14–.17	.16–.18	.16–.17	.14–.16	.16	.16–.20	.16–.18
Shin, with bone	1 lb.	.06–.07	.05–.06	.07–.08	.05–.06	.09	.05–.07	.....
Shin, without bone	1 lb.	.12	.10–.12	.12–.14	.10–.12	.14	.12–.14	.14
Steak	1 lb.	.12–.16	.16–.18	.16–.18	.16–.20	.19	.18–.20	.18
Steak, rump	1 lb.	.20–.24	.20–.24	.24–.26	.20–.24	.26	.20–.24	.24–.28
Thick flank	1 lb.	.13–.17	.14–.16	.16	.13–.15	.18	.16–.18	.12–.14
Thin flank	1 lb.	.10	.08–.10	.09–.12	.06–.08	.08	.08–.12	.10–.12
Mutton, British or home killed:								
Leg	1 lb.	.16–.18	.16–.18	.18–.19	.18–.20	.19	.18–.20	.18
Shoulder	1 lb.	.14–.17	.15–.17	.17–.18	.16–.18	.17	.17–.19	.16–.18
Breast	1 lb.	.08–.11	.10–.12	.10	.08	.09	.10–.12	.09–.12
Neck, best end	1 lb.	.15–.18	.16–.18	.16–.18	.16–.20	.18	.16–.20	.16
Neck, scrag end	1 lb.	.11–.14	.08–.12	.12–.14	.10–.14	.11	.10–.12	.10–.14
Chops, trimmed	1 lb.	.26	.18–.20	.22–.24	.20–.24	.24	.20–.24	.26
Pork, British or home killed:								
Leg	1 lb.	.16	.14	.16–.17	.16–.18	.17	.14–.16	.15–.17
Fore loin	1 lb.	.15–.17	.14–.16	.16–.17	.16–.18	.17	.18–.19	.16
Belly	1 lb.	.14–.15	.14	.14	.12–.14	.16	.14	.14
Chops	1 lb.	.16	.15–.18	.18	.18–.20	.19	.16–.20	.16–.18
Beef, foreign or colonial:								
Ribs	1 lb.	.10	.09–.10	.09–.10	.09–.11	.12	.10–.12	.09–.11
Silverside	1 lb.	.10–.12	.16	.08–.16	.09–.12	.12	.10–.12	.09–.10
Shin, with bone	1 lb.	.04–.05	.04–.05	.04–.05	.04	.....	.05	.....
Shin, without bone	1 lb.	.07–.09	.....	.08–.10	.07–.08	.10	.08–.10	.08–.10
Steak	1 lb.	.10	.13–.16	.10–.14	.14	.16	.11–.12	.10–.14
Steak, rump	1 lb.	.12–.16	.18	.16	.12–.14	.22	.12–.15	.14–.16
Thick flank	1 lb.	.10–.12	.09–.11	.09–.10	.08–.10	.14	.09–.12	.08–.10
Thin flank	1 lb.	.08–.07	.05–.07	.05–.06	.04–.06	.06	.05–.06	.06–.08
Mutton, foreign or colonial:								
Leg	1 lb.	.10	.10	.09–.10	.10	.11	.09–.11	.09–.10
Shoulder	1 lb.	.08–.10	.09	.08–.10	.08	.11	.09–.10	.09–.10
Breast	1 lb.	.05–.06	.05–.06	.03	.05–.06	.06	.05	.05–.06
Neck, best end	1 lb.	.09	.09	.07–.09	.10–.12	.11	.09–.10	.....
Neck, scrag end	1 lb.	.05–.06	.06	.05–.07	.05–.07	.07	.05–.06	.03
Chops, trimmed	1 lb.	.10–.12	.08–.12	.10–.12	.12–.14	.15	.11–.12	.10–.12

[a] Including Bootle.
[b] Including Salford.
[c] Roll bacon.
[d] Cheshire cheese.

In order to obtain for each town an indication of the level of prices compared with other towns, index numbers have been constructed, the level of prices in London being taken as the base (100). In the construction of the index numbers, in order to allow for the varying importance of the prices of different articles, as judged by the normal expenditure of a working-class family, recourse was had to "weighting." For this purpose the information contained in the family

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budgets collected by the Board of Trade in the summer of 1904 was utilized. Schedules asking for particulars as to income and the main items of expenditure on food and rent for one week by a workman and his wife and children were sent to a large number of members of workmen's organizations, cooperative societies, and individuals, who were asked to furnish the desired information or to obtain the particulars from fellow-workmen. After the exclusion of the imperfect schedules, there remained 1,944 family schedules available for statistical purposes.

The following table groups these families according to the aggregate weekly income of the family (not of the principal wage-earner only), and shows for each group the average weekly family income and the average number of children at home:

NUMBER AND AVERAGE INCOME OF URBAN WORKMEN'S FAMILIES REPORTING IN EACH CLASSIFIED INCOME GROUP AND AVERAGE NUMBER OF CHILDREN LIVING AT HOME, FOR ONE WEEK IN SUMMER OF 1904.

Classified weekly income.	Families reporting.	Average weekly family income.	Average number of children at home.
Under 25s. ($6.08)	261	$5.20	3.1
25s. ($6.08) or under 30s. ($7.30)	289	6.56	3.3
30s. ($7.30) or under 35s. ($8.52)	416	7.77	3.2
35s. ($8.52) or under 40s. ($9.73)	382	8.89	3.4
40s. ($9.73) or over	596	12.66	4.4
Total	1,944	8.96	3.6

In regard to the statistics of families with the higher ranges of income, it must be pointed out that the magnitude of the family income is frequently due not to the higher remuneration of the principal wage-earners, but to the supplementary earnings of other members of the family living at home. It appears that the families represented by the budgets, especially those with 40s. ($9.73) a week or upward, include more than the normal number of persons above the age of children, and hence their average consumption of food is unusually high. It does not follow that the statistics of families with incomes of the same amount, derived entirely from the high earnings of one man, would yield similar results.

The tables following give the average expenditures for food of the 1,944 workmen's families to which the returns relate and the quantities consumed by them of the various articles of food in one week in summer of 1904. All children living at home, irrespective of age, have been included, but returns in which lodgers appeared have been excluded. It should be remembered also that intoxicating liquors and tobacco are not included in the returns.

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AVERAGE COST OF FOOD CONSUMED BY URBAN WORKMEN'S FAMILIES REPORTING IN EACH CLASSIFIED INCOME GROUP, FOR ONE WEEK IN SUMMER OF 1904.

Items.	Average cost for families reporting weekly incomes of—					Average cost for all families reporting.
	Under $6.08.	$6.08 or under $7.30.	$7.30 or under $8.52.	$8.52 or under $9.73.	$9.73 or over.	
Bread and flour	$0.74	$0.81	$0.80	$0.82	$1.05	$0.87
Meat (bought by weight)	.65	.83	1.04	1.08	1.43	1.08
Other meat (including fish)	.15	.18	.20	.24	.32	.24
Bacon	.14	.18	.21	.23	.32	.23
Eggs	.12	.17	.22	.24	.34	.24
Fresh milk	.16	.24	.31	.33	.40	.31
Cheese	.10	.11	.12	.12	.16	.13
Butter	.28	.39	.45	.49	.74	.52
Potatoes	.18	.20	.21	.21	.28	.22
Vegetables and fruit	.10	.14	.20	.24	.32	.22
Currants and raisins	.03	.04	.05	.06	.08	.06
Rice, tapioca, and oatmeal	.09	.10	.12	.12	.14	.12
Tea	.19	.23	.26	.27	.34	.27
Coffee and cocoa	.04	.07	.07	.09	.11	.08
Sugar	.16	.20	.22	.23	.30	.24
Jam, sirup, etc	.09	.11	.12	.13	.18	.13
Pickles and condiments	.04	.05	.07	.07	.09	.07
Other items	.25	.32	.38	.46	.61	.44
Total	3.51	4.37	5.05	5.43	7.21	5.47

AVERAGE QUANTITY OF FOOD CONSUMED BY URBAN WORKMEN'S FAMILIES REPORTING IN EACH CLASSIFIED INCOME GROUP, FOR ONE WEEK IN SUMMER OF 1904.

Items.	Average quantity consumed by families reporting weekly incomes of—					Average quantity consumed by all families reporting.
	Under $6.08.	$6.08 or under $7.30.	$7.30 or under $8.52.	$8.52 or under $9.73.	$9.73 or over.	
Bread and flour.....pounds..	28.44	29.97	29.44	29.99	37.76	32.04
Meat (bought by weight).....do....	4.44	5.33	6.26	6.43	8.19	6.50
Bacon.....do....	.94	1.11	1.19	1.38	1.82	1.38
Fresh milk.....pints..	5.54	7.72	9.85	10.34	12.63	9.91
Cheese.....pounds..	.67	.70	.79	.77	1.02	.83
Butter.....do....	1.10	1.50	1.69	1.89	2.78	1.96
Potatoes.....do....	14.05	15.84	16.11	15.87	19.93	16.92
Currants and raisins.....do....	.42	.50	.62	.80	.91	.70
Rice, tapioca, and oatmeal.....do....	2.54	2.64	2.93	2.55	3.38	2.95
Tea.....do....	.48	.55	.57	.59	.72	.60
Coffee and cocoa.....do....	.15	.18	.20	.23	.29	.22
Sugar.....do....	3.87	4.62	4.79	5.21	6.70	5.31

From the average quantity of food consumed weekly by workmen's families, as shown in the foregoing table, and from information obtained from other sources, the following are the quantities of the selected commodities assumed to be consumed by a working-class family in a week:

Tea.....pound..	0.6	Potatoes.....pounds..	17
Sugar.....do....	5½	Flour.....do....	10
Bacon.....do....	1½	Bread.....do....	22
Eggs.....dozen..	1	Milk.....pints..	10
Cheese.....pound..	¾	Meat.....pounds..	6½
Butter.....pounds..	2	Coal.....hundredweight..	2

The predominant prices in each town, as ascertained for the various articles, are weighted in accordance with the above quantities, the total expenditure so obtained being expressed as a percentage of the corresponding total as compiled from prices in London. The follow-

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ing table shows, in descending order, the price index numbers thus constructed for the various towns:

RELATIVE LEVEL OF PRICES IN SPECIFIED ENGLISH AND WELSH TOWNS AS COMPARED WITH LONDON.

Town.	Index number.	Town.	Index number.	Town.	Index number.
Dover	106	Merthyr-Tydfil	97	Leicester	93
Portsmouth	105	Norwich	97	Rochdale	93
Croydon	104	Nottingham	96	Sheffield	93
Sheerness	104	Taunton	96	Birkenhead	92
Ipswich	103	York	96	Burton-on-Trent	92
Southampton	103	Bradford	95	Gloucester	92
Chatham and Gillingham	101	Bristol	95	Keighley	92
Luton	101	Burnley	95	Manchester and Salford	92
Reading	101	Middlesborough	95	Newport (Monmouth)	92
London	100	Northampton	95	Warrington	92
Barrow-in-Furness	99	Oldham	95	Birmingham	91
Bedford	99	Peterborough	95	Liverpool and Bootle	91
Cardiff	99	Swansea	95	Normanton	91
Coventry	99	Castleford	94	St. Helens	91
Hull	99	Chester	94	Hanley	90
Plymouth and Devonport	99	Halifax	94	Macclesfield	90
Stockton-on-Tees	99	South Shields	94	Preston	90
Darlington	98	Sunderland	94	Stoke-on-Trent	90
Gateshead	98	Worcester	94	Walsall	90
Jarrow	98	Crewe	93	Blackburn	89
Lincoln	98	Derby	93	Bolton	89
Newcastle-on-Tyne	98	Grimsby	93	Wolverhampton	89
Swindon	98	Kidderminster	93	Stockport	88
Carlisle	97	Leeds	93	Wigan	88
Huddersfield	97				

The total range for prices is much narrower than for rents, the difference between the maximum and minimum index numbers for prices being only 18 points as contrasted with 68 points for rent.

SCOTLAND.

The following table shows the predominant range of prices for the principal commodities in the whole group of Scottish towns, including Edinburgh (and Leith):

RETAIL PRICES OF COMMODITIES IN TOWNS OF SCOTLAND, OCTOBER, 1905.

Commodity.	Unit.	Number of towns included.	Predominant range of retail prices, Oct., 1905.	Towns in which the mean predominant price is—		
				Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
Tea	1 lb.	10	$0.32–$0.45	10		
Sugar, granulated	1 lb.	10	.04	8	1	1
Bacon	1 lb.	10	.17–.21	9	1	
Cheese, American cheddar	1 lb.	10	.14–.16	10		
Butter:						
Colonial or foreign	1 lb.	7	.26–.28	7		
Danish	1 lb.	10	.28–.30	9		1
Potatoes	7 lbs.	10	.04–.06	10		
Flour	7 lbs.	10	.20–.22	8	1	1
Bread	4 lbs.	10	.10–.12	9		1
Milk	1 qt.	10	.06–.08	8	2	
Coal	1 cwt.	10	.19–.25	6	2	2
Meat:						
Beef	1 lb.	10	.18–.20	8	1	1
Mutton	1 lb.	10	.16–.19	7	2	1
Pork	1 lb.	10	.16–.18	9	1	

If this table be compared with the corresponding one for England and Wales, it will be observed that the ranges of predominant prices in the Scottish towns show as a whole a distinctly higher level.

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In the following table index numbers are given showing the relative level of prices in the group of Scottish towns, the prices in Edinburgh being taken as the base (100). In the construction of the index numbers the weights used are the same as those for England and Wales.

RELATIVE LEVEL OF PRICES IN SPECIFIED SCOTTISH TOWNS AS COMPARED WITH EDINBURGH.

Town.	Index number.	Town.	Index number.
Galashiels	105	Falkirk	99
Perth	103	Kilmarnock	99
Dundee	103	Glasgow	98
Greenock	100	Paisley	97
Edinburgh (and Leith)	100	Aberdeen	96

From the above it will be seen that on the whole there is very little variation between the towns, the difference between the maximum and minimum being only 9 points.

IRELAND.

The next table shows the predominant range of prices for the principal commodities in the whole group of Irish towns, including Dublin:

RETAIL PRICES OF COMMODITIES IN TOWNS OF IRELAND, OCTOBER, 1905.

Commodity.	Unit.	Number of towns included.	Predominant range of retail prices, Oct., 1905.	Towns in which the mean predominant price is—		
				Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
Tea	1 lb.	6	$0.43–$0.49	5	1	
Sugar, granulated	1 lb.	6	.04	5	1	
Bacon	1 lb.	6	.15– .19	6		
Cheese, American cheddar	1 lb.	6	.15– .17	6		
Butter, Irish	1 lb.	6	.28	4	1	1
Potatoes	7 lbs.	6	.04– .06	5		1
Flour	7 lbs.	6	.18– .20	6		
Bread	4 lbs.	6	.10– .12	6		
Milk	1 qt.	6	.05	5		1
Coal	1 cwt.	6	.24	5	1	
Meat:						
Beef	1 lb.	6	.13– .16	6		
Mutton	1 lb.	6	.14– .16	4	1	1
Pork	1 lb.	5	.14– .16	5		

Index numbers are given in the table following showing the relative level of prices in the group of Irish towns, the prices in Dublin being taken as the base (100). The weights used are the same as for England and Wales.

RELATIVE LEVEL OF PRICES IN IRISH TOWNS AS COMPARED WITH DUBLIN.

Town.	Index number.	Town.	Index number.
Belfast	101	Limerick	96
Dublin	100	Cork	95
Londonderry	97	Waterford	92

As between the different towns, the differences in prices shown above are not very great, being but 9 points.

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RENTS AND PRICES COMBINED.

The presentation following gives the index numbers for each of the specified towns in England and Wales, Scotland, and Ireland for that portion of the cost of living which is due to expenditure on food and fuel and on housing accommodation. As the amount which has to be expended on food, etc., is considerably greater than that which has to be spent on rent, a weight of 4 has been given to prices and a weight of 1 to rent.

RELATIVE LEVEL OF RENT AND PRICES, AND OF RENT AND PRICES COMBINED, IN SPECIFIED TOWNS OF THE UNITED KINGDOM.

ENGLAND AND WALES.

Town.	Index number.			Town.	Index number.		
	Rent.	Prices.	Rent and prices combined.		Rent.	Prices.	Rent and prices combined.
London	100	100	100	York	53	96	87
Croydon	81	104	99	Castleford	53	94	86
Dover	56	106	96	Grimsby	58	93	86
Plymouth and Devonport	81	99	95	Halifax	55	94	86
Portsmouth	57	105	95	Leeds	56	93	86
Sheerness	59	104	95	Liverpool and Bootle	65	91	86
Southampton	65	103	95	Manchester and Salford	62	92	86
Newcastle-on-Tyne	76	98	94	Newport (Monmouth)	63	92	86
Luton	61	101	93	Northampton	49	95	86
Barrow-in-Furness	63	99	92	Taunton	47	96	86
Gateshead	66	98	92	Worcester	56	94	86
Jarrow	68	98	92	Birmingham	59	91	85
Reading	58	101	92	Chester	50	94	85
Cardiff	59	99	91	Derby	51	93	85
Chatham and Gillingham	49	101	91	Keighley	57	92	85
Ipswich	44	103	91	Rochdale	52	93	85
Darlington	58	98	90	Sheffield	55	93	85
Huddersfield	64	97	90	Burton-on-Trent	52	92	84
Stockton-on-Tees	54	99	90	Crewe	48	93	84
Swansea	68	95	90	Leicester	48	93	84
Swindon	59	98	90	Normanton	57	91	84
Bedford	49	99	89	Peterborough	39	95	84
Carlisle	58	97	89	St. Helens	56	91	84
Coventry	49	99	89	Warrington	50	92	84
Hull	48	99	89	Gloucester	48	92	83
Lincoln	54	98	89	Kidderminster	43	93	83
Birkenhead	70	92	88	Stoke-on-Trent	54	90	83
Bradford	59	95	88	Bolton	53	89	82
Merthyr-Tydfil	50	97	88	Hanley	51	90	82
Middlesborough	59	95	88	Preston	48	90	82
Nottingham	56	96	88	Wolverhampton	53	89	82
Oldham	60	95	88	Blackburn	50	89	81
Bristol	53	95	87	Stockport	51	88	81
Burnley	53	95	87	Walsall	43	90	81
Norwich	48	97	87	Wigan	50	88	80
South Shields	61	94	87	Macclesfield	32	90	78
Sunderland	59	94	87				

SCOTLAND.

Dundee	92	103	101	Perth	76	103	98
Edinburgh (and Leith)	100	100	100	Falkirk	91	99	97
Glasgow	99	98	98	Paisley	90	97	96
Greenock	92	100	98	Kilmarnock	86	99	96
Galashiels	69	105	98	Aberdeen	84	96	94

IRELAND.

Dublin	100	100	100	Cork	66	95	89
Belfast	61	101	93	Londonderry	54	97	88
Limerick	69	96	91	Waterford	53	92	84

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RATES OF WAGES.

An inquiry into the rates of wages prevailing in October, 1905, in the various towns canvassed was made as complementary to the one into rents and prices. In order to facilitate comparison, four industries were selected which were represented in all the towns with few exceptions, and in which the standard rates of wages could be ascertained with accuracy. These industries were the building trades, engineering, printing (hand compositors only), and furnishing; and the rates in London (for England and Wales) were again taken as the base for the index numbers. The rates for skilled men were taken in all these employments, but in addition the rates paid to laborers in the engineering and building trades were also selected for the construction of index numbers. The rates referred to are in all cases weekly rates.

ENGLAND AND WALES.

The following table, which is exclusive of London, shows the predominant range of weekly wages for each of the occupations in the selected standard trades in towns of England and Wales:

RATES OF WAGES IN TOWNS OF ENGLAND AND WALES, OCTOBER, 1905.

Industry and occupation.	Number of towns included.	Predominant range of weekly wages, Oct., 1905.	Number of towns in which the mean wage for the given occupation was—		
			Within the predominant range.	Below the predominant range.	Above the predominant range.
BUILDING TRADES.					
Bricklayers	72	$9.12-$9.85	37	18	17
Masons	72	9.04- 9.57	38	17	17
Carpenters and joiners	72	8.80- 9.57	36	18	18
Plumbers	69	8.60- 9.67	47	12	10
Plasterers	69	8.88-10.14	45	13	11
Painters	70	7.66- 9.12	42	11	8
Bricklayers' laborers	71	5.92- 6.57	37	18	16
Masons' laborers	70	5.72- 6.45	38	17	15
Plasterers' laborers	71	6.02- 6.75	34	17	20
ENGINEERING TRADES.					
Fitters	61	7.79- 8.76	49	10	2
Turners	61	7.79- 8.76	49	10	2
Smiths	56	7.79- 8.76	44	6	6
Pattern makers	57	8.27- 9.25	39	9	9
Laborers	39	4.38- 5.35	37	1	1
PRINTING TRADE.					
Compositors, hand	53	6.81- 8.03	45	6	12
FURNISHING TRADES.					
Cabinetmakers	36	8.21- 9.31	29	4	3
Upholsterers	35	8.21- 9.31	29	2	4
French polishers	35	7.66- 8.76	33	1	1

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In the following table is shown the predominant rate of weekly wages for skilled men for each of the specified occupations in the building, engineering, and printing trades in seven towns of England, which at the census of 1901 had a population of over 300,000:

RATES OF WEEKLY WAGES IN SEVEN SELECTED TOWNS OF ENGLAND, OCTOBER, 1905.

Industry and occupation.	Birmingham.	Bristol.	Leeds.	Liverpool.(a)	London.	Manchester.(b)	Sheffield.
BUILDING TRADES.							
Bricklayers	$10.42	$9.85	$9.53	$9.53	$10.65	$11.05	$9.54
Masons	10.34	9.85	9.53	9.53	10.65	[c] 9.53	9.54
Carpenters and joiners	9.82	9.85	9.03	9.53	10.65	9.53	9.03
Plumbers	10.42	9.85	9.03	9.53	11.15	9.53	9.03
Plasterers	10.95	9.85	9.53	9.53	11.15	10.54	9.03
Painters	9.73	9.31	8.11	8.54	[d] 8.62	9.23	7.53
ENGINEERING TRADES.							
Fitters	8.76	8.76	8.03	8.76	9.49	[e] 8.27	9.25
Turners	8.76	8.76	8.03	8.76	9.49	[e] 8.27	9.25
Smiths	8.76	8.76	8.27	9.25	9.49	8.76	9.25
Pattern makers	9.25	9.31	9.00	9.61	[f] 10.46	9.73	9.73
PRINTING TRADE.							
Compositors, hand	8.39	7.54	8.64	8.88	9.49	8.52	8.52

[a] Including Bootle.
[b] Including Salford.
[c] Also $10.04.
[d] Also $9.12.
[e] Also $8.76.
[f] Also $10.58 and $10.65.

In the table following index numbers are given comparing (with London as the base = 100) the weekly rates of wages of workmen in the four specified industries in the different towns of England and Wales, the towns being arranged in seven geographical groups:

RELATIVE LEVEL OF WEEKLY WAGES IN ENGLISH AND WELSH TOWNS AS COMPARED WITH LONDON.

Geographical groups.	Number of towns included.	Mean index numbers.					
		Building		Engineering.		Furnishing.	Printing.
		Skilled men.	Laborers.	Skilled men.	Laborers.		
London	.....	100	100	100	100	100	100
Northern counties and Cleveland	9	88	88	89	[a] 86	.....	82
Yorkshire (except Cleveland)	10	84	89	85	.....	[a] 82	[a] 82
Lancashire and Cheshire	17	89	88	88	[a] 79	[a] 86	[a] 85
Midlands	15	90	92	86	[a] 81	[a] 86	80
Eastern counties	7	84	84	[a] 74	.....	.....	[a] 71
Southern counties	10	85	85	[a] 85	[a] 85	.....	[a] 71
Wales and Monmouth	4	87	85	[a] 92	[a] 80	[a] 84	78

[a] The number of towns represented in the construction of this index number is less than the total number included within the geographical group.

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SCOTLAND.

The table below, which includes Edinburgh, shows the predominant range of weekly wages for each of the occupations in the selected standard trades in the towns of Scotland:

RATES OF WAGES IN TOWNS OF SCOTLAND, OCTOBER, 1905.

Industry and occupation.	Number of towns included.	Predominant range of weekly wages, Oct., 1905.	Number of towns in which the mean wage for the given occupation was—		
			Within the predominant range.	Below the predominant range.	Above the predominant range.
BUILDING TRADES.					
Bricklayers	9	$9.31–$9.83	7	1	1
Masons	10	8.27– 9.31	10		
Carpenters and joiners	10	8.27– 9.31	9		1
Plumbers	10	8.27– 9.31	9		1
Plasterers	10	8.27– 9.83	10		
Painters	9	8.27– 9.31	9		
Bricklayers' laborers	9	5.17– 5.96	8		1
Masons' laborers	10	5.17– 6.20	10		
Plasterers' laborers	10	5.35– 6.20	9	1	
ENGINEERING TRADES.					
Fitters	8	7.30– 8.52	8		
Turners	8	7.30– 8.52	8		
Smiths	7	7.30– 8.76	7		
Pattern makers	7	8.03– 9.31	7		
Laborers	6	4.38– 4.87	6		
PRINTING TRADE.					
Compositors, hand	10	6.57– 8.27	10		
FURNISHING TRADES.					
Cabinetmakers	5	7.59– 8.80	5		
Upholsterers	5	7.50– 8.80	5		
French polishers	5	7.50– 8.27	5		

The index numbers comparing (with Edinburgh as the base = 100) the weekly rates of wages of workmen in the four specified industries in the specified towns of Scotland are given below:

RELATIVE LEVEL OF WEEKLY WAGES IN SPECIFIED SCOTTISH TOWNS AS COMPARED WITH EDINBURGH.

Towns.	Building.		Engineering.		Furnishing.	Printing.
	Skilled men.	Laborers.	Skilled men.	Laborers.		
Aberdeen	91	91	90		88	93
Dundee	100	99	91		90	98
Edinburgh (and Leith)	100	100	100	100	100	100
Falkirk	98	100	93	103	91	88
Galashiels	90	91				84
Glasgow	104	103	103	92	101	105
Greenock	103	100	105	92		105
Kilmarnock	98	94	90	103		93
Paisley	104	109	103	97		105
Perth	94	102				93

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IRELAND.

The table following, which includes Dublin, shows the predominant range of weekly wages for each of the occupations in three selected standard trades in the towns of Ireland:

RATES OF WAGES IN TOWNS OF IRELAND, OCTOBER, 1905.

Industry and occupation.	Number of towns included.	Predominant range of weekly wages, Oct., 1905.	Number of towns in which the mean wage for the given occupation was—		
			Within the predominant range.	Below the predominant range.	Above the predominant range.
BUILDING TRADES.					
Bricklayers	6	$7.30–$9.31	6	.....	.....
Masons	6	7.30– 9.31	6	.....	.....
Carpenters and joiners	6	7.30– 9.31	6	.....	.....
Plumbers	6	7.30– 9.31	6	.....	.....
Plasterers	6	7.30– 9.31	6	.....	.....
Painters	6	7.30– 8.76	6	.....	.....
Bricklayers' laborers	6	3.41– 4.87	6	.....	.....
Masons' laborers	6	3.41– 4.87	6	.....	.....
Plasterers' laborers	6	3.41– 4.87	6	.....	.....
ENGINEERING TRADES.					
Fitters	3	8.27– 9.00	3	.....	.....
Turners	3	8.27– 9.25	3	.....	.....
Smiths	3	8.27– 9.00	3	.....	.....
Pattern makers	3	9.00– 9.49	3	.....	.....
Laborers	3	3.80– 4.38	3	.....	.....
PRINTING TRADE.					
Compositors, hand	5	7.06– 8.52	5	.....	.....

The index numbers comparing (with Dublin as the base = 100) the weekly rates of wages of workmen in four specified industries in the specified towns of Ireland are given below:

RELATIVE LEVEL OF WEEKLY WAGES IN SPECIFIED IRISH TOWNS AS COMPARED WITH DUBLIN.

Towns.	Building.		Engineering.		Furnishing.	Printing.
	Skilled men.	Laborers.	Skilled men.	Laborers.		
Belfast	104	90	103	103	102	97
Cork	97	91	96	113	.....	93
Dublin	100	100	100	100	100	100
Limerick	90	76	.....	.....	.....	83
Londonderry	90	72	.....	.....	.....	83
Waterford	84	73	.....	.....	.....	.....

RELATION OF RATES OF WAGES TO RENTS AND PRICES.

The presentation which follows shows for each geographical group of England and Wales and for Scotland and Ireland the mean index numbers for rent and for prices and for rent and prices combined, together with the mean index numbers for the weekly rates of wages of skilled men in the building, engineering, and printing industries. London has been taken as the base (100) in each case, including the Scottish and Irish groups. In the construction of the index numbers for rent and prices combined, prices have been given a weight of 4 and rent a weight of 1.

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RELATIVE LEVEL OF RENT AND PRICES, OF RENT AND PRICES COMBINED, AND OF WEEKLY WAGES OF SKILLED MEN IN 9 GEOGRAPHICAL GROUPS OF THE UNITED KINGDOM AS COMPARED WITH LONDON.

Geographical groups.	Number of towns included.	Mean index numbers.					
		Rent and prices.			Wages (skilled men).		
		Rent.	Prices.	Rent and prices combined.	Building.	Engineering.	Printing.
England and Wales:							
London		100	100	100	100	100	100
Northern counties and Cleveland	9	62	97	90	88	89	82
Yorkshire (except Cleveland)	10	56	94	87	84	85	a 82
Lancashire and Cheshire	17	54	92	84	89	88	a 85
Midlands	15	51	93	85	90	86	80
Eastern counties	7	50	98	88	84	a 74	a 71
Southern counties	10	61	102	93	85	a 85	a 71
Wales and Monmouth	4	60	96	89	87	a 92	78
Scotland	10	69	102	95	86	a 83	80
Ireland	6	50	97	87	79	a 90	a 82

a The number of towns represented in the construction of this index number is less than the total number included within the geographical group.

It will be seen that the table does not indicate the existence of any close connection between the local variations in the level of rent and prices combined and the level of the standard rates of wages in the selected groups of occupations, while the relative levels of wages in the different industries of each district show considerable differences.

If the mean of the wages index numbers in each group for the three industries (building, engineering, and printing) be taken, and the means so obtained divided by the index numbers for rent and prices combined, a comparison of the average level of "real" wages in the selected occupations may be made, viz, the money wages expressed in terms of their purchasing capacity (as shown in the index numbers of rent and prices combined). The results are shown in the table which follows:

AVERAGE LEVEL OF "REAL" WAGES AND LEVEL OF RENT AND PRICES COMBINED IN 9 GEOGRAPHICAL GROUPS OF THE UNITED KINGDOM, AS COMPARED WITH LONDON.

Geographical groups.	Number of towns included.	Mean index numbers.		
		Rent and prices combined.	Wages of skilled men in building, engineering, and printing trades.	Approximate relative level of "real" wages.
England and Wales:				
London		100	100	100
Northern counties and Cleveland	9	90	86	96
Yorkshire (except Cleveland)	10	87	84	97
Lancashire and Cheshire	17	84	87	104
Midlands	15	85	85	100
Eastern counties	7	88	76	86
Southern counties	10	93	80	86
Wales and Monmouth	4	89	86	97
Scotland	10	95	83	87
Ireland	6	87	84	97

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CHANGES IN RENTS, RETAIL PRICES, AND RATES OF WAGES BETWEEN OCTOBER, 1905, AND OCTOBER, 1907.

It will be remembered that the returns upon which the index numbers referred to in the foregoing sections are based related in each case to October, 1905, and it will be of interest to note what changes have occurred as regards rents, prices, and wages during the two years since that date.

With reference to rents, the interval of two years is too short to enable any differences to be traced for any town as a whole, and there is no reason to believe that there has been any appreciable change in the level of rent shown in the various preceding tables.

As regards the movement of retail prices, the only available data are those relating to London. The general level of retail prices of commodities in London in the year 1907 was about 1 per cent higher than in the year 1905. The commodities to which this figure relates consist of 21 articles of food (including those dealt with in the foregoing tables), but are exclusive of coal. The retail price of this article in 1907 was about 13 per cent higher than in 1905. Among the food commodities included, there was a fall between the two periods in the prices of tea, sugar, and bread. The price of the last-named article was about 4 per cent lower in 1907 than in 1905. The prices of bacon, eggs, butter, cheese, and potatoes were a little higher in 1907 than in 1905. The price of milk showed no change during the two years. The price of meat (English and foreign or colonial) was about 2 per cent higher in 1907 than in 1905. The rise in the price of beef was about 3 per cent; the price of mutton showed no change; that of pork was nearly 2 per cent higher.

In regard to rates of wages in the various towns there was, on the whole, a rise as between October, 1905, and October, 1907. In the building trades group the rate of wages at October, 1907, was slightly higher in three of the trades (bricklayers, carpenters and joiners, and plumbers) and slightly lower in three trades (masons, plasterers, and painters). In the case of laborers in the building trades, the rates were the same as at October, 1905. In the engineering trade there was a rise of nearly 1.5 per cent in the wages of each of the four occupations (fitters, turners, smiths, and pattern makers) and a slight rise in the wages of laborers. In the printing trade the wages of compositors in October, 1907, were about 1 per cent higher than in October, 1905. In the furnishing trade there was no change except in the case of cabinetmakers, where there was a slight rise.

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RECENT REPORTS OF STATE BUREAUS OF LABOR STATISTICS.

MINNESOTA.

Tenth Biennial Report of the Bureau of Labor of the State of Minnesota, 1905–1906. W. H. Williams, Commissioner. 534 pp.

The subjects presented in this report are: Factory inspection, 248 pages; accidents to labor, 9 pages; child labor, 76 pages; railroad switch yards, 20 pages; labor organizations, 44 pages; employment offices for males, 5 pages; State free employment bureau, 17 pages; mining, 46 pages; census of manufactures, 36 pages; labor laws, 19 pages; blank forms used by the bureau, 5 pages.

ACCIDENTS TO LABOR.—The bureau of labor, during the ten months from October 1, 1904, to July 31, 1905, received reports of 745 accidents, 60 of which were fatal; during the year from August 1, 1905, to July 31, 1906, the bureau received reports of 927 accidents, 40 of which were fatal.

CHILD LABOR.—This section contains court proceedings in cases brought for enforcement of the child labor laws and lists of permits issued by school superintendents to children under 16 years of age. In the school year 1904–5, 1,725 such permits were issued. In 1905 the factory inspectors found 1,215 and in 1906 but 993 children employed in the manufacturing plants of the State.

RAILROAD SWITCH YARDS.—Owing to a lack of uniformity in the interpretation of the law for the protection of switches, etc., a meeting of representatives of the railroads operating in the State was held in February, 1906, to discuss the adoption of a standard system of blocking frogs, switches, and guard rails. The proceedings of this meeting are given. Reports of the inspection of the 102,715 foot blocks inspected by representatives of the bureau of labor in 1905 show that 77.2 per cent were in good condition, 4.5 per cent were in fair condition, 14.9 per cent were in bad condition, and 3.4 per cent were missing. Of the 103,413 foot blocks inspected in 1906, 71.6 per cent were found to be in good condition, 9.1 per cent in fair condition, 16.4 per cent in bad condition, and 2.9 per cent to be missing.

LABOR ORGANIZATIONS.—Statistics of labor organizations in the State for the year 1906 are presented in this section. Tables show

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by localities, names of organizations, with date of organization, and membership; hours of labor per day and per week; union scale of daily wages of male and female members, increase in wages and decrease in hours of labor since 1904; and monthly dues and character and amount of benefit features of the organizations. The State as a whole showed an increase in number of organizations and in membership, there being, in 1906, 339 unions, 338 of which reported a membership of 27,978, as compared with 318 unions in 1904 with a membership of 25,432.

EMPLOYMENT BUREAUS FOR MALES.—This section shows the information secured in an investigation of the 55 employment offices located in St. Paul, Minneapolis, and Duluth in 1906. A table is given showing the names of the firms, their places of business, amount of license fee paid, and sureties on bonds.

FREE PUBLIC EMPLOYMENT BUREAU.—From the establishment of this office in Minneapolis, June 1, 1905, to August 1, 1906, 7,263 applications for male and 5,289 applications for female help were received. Applications for positions were received from 6,846 males and 4,811 females, and positions were secured for 6,636 males and 4,498 females.

MINING.—Under this caption are presented statistics of the iron-ore mining industry of the State. Production of ore in tons, the number of employees, their rate of wages, and the number of accidents are given.

CENSUS OF MANUFACTURES.—The information given in this section is a reproduction of figures published by the United States Bureau of the Census.

LABOR LAWS.—The text of the revised laws of the State relating to labor is here given in full.

MISSOURI.

Twenty-eighth Annual Report of the Bureau of Labor Statistics and Inspection of the State of Missouri, for the year ending November 5, 1906. William Anderson, Commissioner. viii, 571 pp.

This report consists of three parts, as follows: Part I, Surplus products of counties, Government land in Missouri and increase in land values, population of Missouri, and foreign immigration into Missouri during 1905, 82 pages; Part II, Manufacturing industries, 1905, 413 pages; Part III, Labor organizations and free employment offices, 73 pages.

SURPLUS PRODUCTS, GOVERNMENT LAND, AND LAND VALUES.—During 1905 the 114 counties of the State shipped surplus products aggregating in value $275,297,299. At the present time (1906) there

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are about 110,000 acres of land in Missouri subject to homestead or cash entry. In 1906 the assessed valuation of land in the State was $941,820,035, an increase since 1901 of $149,194,455.

MANUFACTURING INDUSTRIES.—Summarized returns covering 8,871 establishments in 81 industrial groups show for 1905 a total invested capital of $262,834,835, a total value of materials used of $265,502,748, and a total value of products of $456,368,119. During the year there were employed 161,078 males and 34,873 females, and there was paid out in wages a total of $99,770,908. Of the wage-earners, there were 3,076 children under 16 years of age. This is a marked decrease as compared with the number of children employed in 1904. There were reported by the establishments during the year 7,808 accidents, chiefly slight, with but 31 fatalities.

The following table shows for 1905, for each of the 27 industries in the State, which paid out in wages during the year a total exceeding $1,000,000, the number of establishments, capital invested, value of products, amount paid in wages, and number of employees by sex:

STATISTICS OF 27 MANUFACTURING INDUSTRIES, 1905.

Industry.	Establishments.	Capital invested.	Value of products.	Wages paid.	Employees.	
					Male.	Female.
Bakeries	912	$4,489,430	$14,322,382	$3,315,119	4,943	2,200
Boots and shoes	36	11,777,279	27,613,060	6,038,121	9,561	4,740
Brick and tile	216	7,466,683	6,442,090	3,146,398	6,528	62
Carriages and wagons	604	4,126,528	8,682,995	2,587,939	4,549	99
Car works	30	9,564,916	21,428,387	6,762,035	11,202	36
Cigars	634	1,485,668	3,539,140	1,222,222	2,200	224
Clothing, men's	87	5,552,525	9,880,290	2,803,428	1,651	5,704
Clothing, women's	64	1,144,593	3,699,108	1,106,070	993	3,273
Cooperage	170	2,811,113	6,055,343	1,953,918	5,604	67
Drugs and chemicals	150	4,148,193	10,568,134	2,842,209	1,671	1,248
Flour and feed	648	9,503,518	33,804,770	1,966,145	4,054	102
Foundries and machine shops	269	14,319,243	15,777,779	3,271,444	9,235	159
Furniture and house furnishing	96	3,108,474	6,601,990	2,222,929	4,101	249
Grocers' sundries	100	3,275,920	12,807,557	1,515,227	1,547	938
Harness making	441	2,604,474	5,045,932	1,381,117	2,343	32
Light, power, and heat	158	38,655,229	7,442,634	2,592,295	4,304	126
Lime and cement	32	7,419,818	3,197,818	1,665,174	2,918	17
Liquors, malt	49	27,551,310	19,756,465	4,240,096	6,515	412
Lumber and ties	530	6,856,055	10,836,189	4,323,732	12,501	57
Meat packing	37	5,336,168	69,216,025	4,356,668	5,900	244
Planing mills	115	4,272,480	6,631,592	1,852,824	3,054	13
Printing, publishing, and binding	1,221	13,571,213	25,195,417	9,592,697	11,989	4,103
Smelting of ores	25	21,725,882	13,640,637	2,979,535	4,756	8
Stone and marble	206	1,923,968	3,429,154	1,766,132	3,215	11
Stoves and ranges	27	2,374,059	7,065,726	2,363,180	3,250	38
Tinning and sheet iron	498	2,886,134	7,395,155	1,950,330	3,111	186
Tobacco	15	3,197,344	16,008,634	2,212,206	1,893	1,544

The report contains additional tables which show for the various industries the number and wages of salaried employees, by sex, and the classified weekly earnings of adult males, adult females, and children under 16 years of age; also, by occupations in each industry, the number of males and females employed, weekly wages paid each sex, and hours of labor per day and per week.

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LABOR ORGANIZATIONS.—This section of the report presents statistics relative to the labor organizations of the State. Following is a comparative summary of all labor organizations for the years 1904 and 1905:

STATISTICS OF LABOR ORGANIZATIONS, 1904 AND 1905.

Items.	Year.	
	1904.	1905.
Number of organizations reporting	624	609
Number of male members	79,630	74,303
Number of female members	2,403	2,481
Total number of members	82,033	76,784
Average per cent of trade organized	80.82	77.50
Average number of hours constituting a day's work	9.21	9.05
Established wage rate, in cents, per hour	a 28.69	33.85
Average number of days employed	258	284
Number of organizations reporting more work	215	127
Number of organizations reporting less work	82	33
Number of organizations paying out-of-work benefit	40	31
Total amount of out-of-work benefit paid	$3,618.33	$4,936.50
Number of organizations paying strike benefit	362	414
Average amount per week of strike benefit	$5.51	$5.66
Number of organizations paying sick and accident benefit	144	126
Average amount per week of sick and accident benefit	$4.72	$5.10
Total amount of sick and accident benefit paid	$48,983	$35,212
Number of organizations paying death benefit	334	379
Average amount of death benefit per member	$110.11	$150.43
Total amount of death benefit paid	$79,782	$137,249
Total amount paid from all benefit funds	$319,243	$305,985
Total number of strikes	95	40
Total number of lockouts	24	9
Number of strikes and lockouts settled satisfactorily	63	31
Number of strikes and lockouts compromised	9	6
Number of strikes and lockouts lost	21	5
Disputes still pending, etc., at close of report	26	7
Number of persons involved in strikes and lockouts	8,988	8,145
Number of persons directly benefited in strikes and lockouts	3,080	2,989
Number of persons directly worsted in strikes and lockouts	3,714	144
Amount expended in support of strikes and lockouts	$110,837	$129,433
Amount of wages lost to members through strikes and lockouts	$250,101	$218,855
Number of organizations reporting increase in wages	40	43
Number of organizations reporting reduction in hours per day	18	5
Number of appeals for arbitration	60	28
Number of disputes settled by arbitration	60	28
Number of fatal accidents	152	116
Number of nonfatal accidents	1,325	900
Total number of accidents	1,477	1,016
Number of organizations reporting agreements with employers	.....	388

a Minimum.

Considering the three largest cities of the State, in 1905 St. Louis had 202 organizations with 43,374 members (41,613 males and 1,761 females); Kansas City had 64 organizations with 8,294 members (8,113 males and 181 females), and St. Joseph had 43 organizations with 2,993 members (2,578 males and 415 females).

FREE EMPLOYMENT OFFICES.—Returns from the free employment offices, located in St. Louis, Kansas City, and St. Joseph, for the year ending September 30, 1906, show 17,064 applications for positions (15,034 by males and 2,030 by females), 18,180 applications for help (14,576 for male help and 3,604 for female help), and that 10,760 positions were filled (9,541 by males and 1,219 by females).

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WISCONSIN.

Twelfth Biennial Report of the Bureau of Labor and Industrial Statistics, 1905–06. J. D. Beck, Commissioner. xiv, 1379 pp.

This report consists of seven parts, as follows: The cooperative store in the United States, 67 pages; statistical aspect of the strike, 73 pages; the liquor traffic in the United States and in Wisconsin, 116 pages; the housing problem in Wisconsin, 84 pages; Wisconsin's resources, industries, and opportunities, 510 pages; manufacturing returns for 1904 and 1905, 281 pages; factory and bakery inspection, free employment offices, and chronicle of industrial events, 215 pages.

THE COOPERATIVE STORE IN THE UNITED STATES.—This part of the report presents the results of a study of the principle of cooperation as represented in the cooperative store. It emphasizes the extent to which the principle is now recognized as a factor in social and industrial progress; details the history of the cooperative movement in the United States; enumerates the kinds of cooperative stores, the causes of the establishment of such stores, and the causes of their failure when failure has resulted, and presents statistics pertaining to those stores now in existence in the United States, with conclusions deduced therefrom relative to the present status of these institutions in this country.

In June, 1905, there were in 32 States 343 cooperative stores, as detailed in the statement following:

COOPERATIVE STORES IN THE UNITED STATES, JUNE, 1905.

State.	Number of stores.	State.	Number of stores.
Arizona	1	New Hampshire	3
Arkansas	2	New Jersey	1
California	68	New York	16
Colorado	2	North Carolina	1
Connecticut	4	North Dakota	2
Idaho	4	Ohio	13
Illinois	8	Oklahoma	1
Indiana	2	Oregon	2
Iowa	17	Pennsylvania	14
Kansas	34	Tennessee	1
Maine	9	Texas	17
Massachusetts	26	Utah	5
Michigan	18	Vermont	2
Minnesota	12	Washington	22
Missouri	1	Wisconsin	30
Montana	4		
Nebraska	1	Total	343

From the foregoing it will be seen that California leads with 68 stores, followed by Kansas with 34, Wisconsin with 30, and Massachusetts with 26. Judging from the returns received from 170 of these establishments, the above 343 stores represented an estimated capitalization approximating $8,520,800, a membership of 76,145 persons, and a trade of $265,526,740. In 1905 the dividends declared

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upon capital stock by 102 stores averaged 9 per cent, while dividends on purchases for 72 stores averaged 6 per cent. The majority of the stores are patronized to the greatest extent by farmers, and in most of the stores general merchandise and groceries are the commodities dealt in.

STATISTICAL ASPECT OF THE STRIKE.—The purpose of this study is to trace the development or growth of strikes through the medium of statistics, and figures are presented showing the increase or decrease of strikes in the United States and in foreign countries. There is a discussion of the causes of strikes, particular attention being given to the movements from time to time which the variations in the causes indicate. The effect of trade-unionism upon the frequency, the duration, and the success or failure of strikes is studied. Finally, conclusions are presented relative to the function of the strike as a feature of industrial life and to the evolution of the strike as indicated by the statistics for a period of twenty years. From the conclusion the following is reproduced:

In the first place, the statistics demonstrate that strikes in the United States are increasing. The absolute increase is very rapid. The number of strikes, number of establishments affected by strikes, number of employees affected by strikes, number of strikers, and the amount of wage loss due to strikes are all increasing. The relative increase is slow but yet steady. * * * American statistics were supplemented by statistics of European strikes. These supplementary statistics show that the strike movement either is assuming or has already assumed large proportions in practically every important industrial country of Europe, and that with the exception of England strikes are increasing in every country which was investigated.

In the second place, the statistics show what the increase of strikes really consists of, i. e., the strikes are arranged according to the purpose at which they aim. It is found that in the United States certain causes are increasing and others are decreasing in importance. The purpose of the strike is being changed; there is a shifting from one set of causes to another. The movement is away from those causes which are generally designated as standard causes and in the direction of causes which are at least more questionable. The statement that wages and hours are the cause of nearly three-fourths of all the strikes in the United States is emphatically denied by the statistics. Wages and hours are still the most important causes, but their relative position is rapidly decreasing, and the per cent of strikes in the United States due to other than purely standard causes is rapidly increasing.

In the third place, the statistics indicate how the strike is being influenced by trade-unionism, i. e., how the character of the strike is changing. On the basis of the number of strikes the effect is to check the increase as trade-unionism becomes older and more experienced; on the basis of the number of employees and establishments affected by strikes the effect is to accelerate the increase. The character of the strike is being changed by the union so that it is becoming of increasing widespread importance to both parties and to the commu-

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nity at large. Again, trade-unionism makes the strike a more formidable weapon as is shown by the much greater success of union as compared with nonunion strikes. At the same time it is important to note that union strikes are not becoming more successful even though unionism is being more and more thoroughly organized. Again, the union strike is generally of greater duration than the nonunion strike. Furthermore, trade-unionism affects the causes of strikes by reducing the importance of the purely standard causes and increasing the importance of "trade-unionism" as a cause of strikes. Finally, trade-unionism tends to "commercialize" the strike. This means, on the one hand, a still further extension of its effect upon the industrial community, and, on the other hand, greater and more skillful control of every phase of the strike by organized labor.

THE LIQUOR TRAFFIC.—This part of the report relates to the liquor traffic in the United States and in Wisconsin. It contains the results of an investigation, made in accordance with an act of 1903, which directed the bureau "to collect and publish all available facts concerning the manufacture, sale, and consumption of spirituous, malt, vinous, or intoxicating liquors used as beverages in the State of Wisconsin." There is a discussion of the magnitude of the liquor traffic as carried on in the United States. The effect of the traffic upon society, as measured by the proportion of the cases of crime and insanity directly traceable to the use of intoxicating liquor, is shown. The inquiry into the liquor traffic in Wisconsin takes into consideration, chiefly, facts relating to the retail distribution of liquors, such as the application of the local-option law, high and low rates of license, number and distribution of saloons with reference to the number and density of population, etc. The statistics presented constitute a fair census of the saloon licenses in the State.

THE HOUSING PROBLEM.—A report upon the housing conditions in the city of Milwaukee constitutes this subject. It treats of the tenement-house problem in its relation to industrial life; gives the methods of solution employed in foreign countries and in America; presents a detailed description of the various elements of the housing problem in Milwaukee, including a statistical study of Milwaukee tenement houses; presents observations upon the various nationalities living in the cities, and outlines the requirements as to water supply, roofs, ceilings, walls, cellars, yards, garbage disposal, etc., that are necessary in order to insure a sanitary dwelling. There is a discussion of the relation of housing conditions to the existence and spread of tuberculosis. Emphasis is laid upon the need of parks and of public playgrounds in crowded districts. Finally, suggestions are made relative to steps which may be taken toward remedying such insanitary conditions as at present exist.

WISCONSIN'S RESOURCES, INDUSTRIES, AND OPPORTUNITIES.—This chapter presents, among a variety of topics, the relative importance

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of the various industries carried on within the State and the opportunities for their further development, and also treats of the water power furnished by the rivers. Attention is especially directed to those industries for which a good opening is offered, and a classification of the different industries is made according to the various cities and villages for which they are best suited.

MANUFACTURING RETURNS FOR 1904 AND 1905.—Each of the 51 larger manufacturing industries of the State is taken up separately, the statistics pertaining to the industry being arranged in eight tables. Following the tables a brief summary of the main facts relating to the industry is given. Twelve minor industries are treated similarly but more briefly. Summary statistics are also given for all establishments that reported for 1905, some of which establishments did not report for 1904 and were therefore not included in the earlier tables. The data in all cases are so arranged as to readily permit of a comparison between those of 1904 and those of 1905. It is possible, therefore, to determine in the case of each industry whether there was an advance or a retrogression during the period covered by the report.

The following summary table is based upon the returns from all establishments (2,382) that reported in 1905, 1,719 establishments being engaged in the leading industries and 663 in the minor:

MANAGEMENT AND OPERATION OF 64 MANUFACTURING INDUSTRIES, 1905.

Items.	Industries.		
	52 leading.	12 minor.	64 total.
Number of private firms	762	392	1,154
Number of male partners	1,147	564	1,711
Number of female partners	102	20	122
Total number of partners	1,249	584	1,833
Number of corporations	957	271	1,228
Number of male stockholders	16,690	2,649	19,339
Number of female stockholders	2,439	505	2,944
Total number of stockholders	19,129	3,154	22,283
Smallest number of persons employed	81,292	9,586	90,878
Greatest number of persons employed	91,190	10,733	101,923
Average number of persons employed	87,821	10,081	97,902
Average days in operation	282	313	290

In 1905, based upon the 52 leading industries only, the value of goods made and work done amounted to $256,660,269.31 and the value of stock used and other material consumed in production to $155,066,109.06, thus leaving an industry product valued at $101,594,160.25. Of this industry product there was devoted to wages and salaries $50,730,328.91, or 49.93 per cent, and to profit and minor expenses $50,863,831.34, or 50.07 per cent The average yearly earnings per employee were $467.58.

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Comparing 1904 with 1905 data for 62 industries (51 leading and 11 minor) a slight increase in 1905 over 1904 was found in the average hours of labor of all employees. The hours per day for men were 9.91 in 1904 and 9.92 in 1905; for women they were 9.64 in 1904 and 9.71 in 1905. The average daily wages of all employees were about 2 per cent higher in 1905 than in 1904, those of men being 2½ per cent higher and those of women less than 1 per cent higher.

FREE EMPLOYMENT OFFICES.—A summary of the operations of the four free employment offices of the State for the years ending June 30, 1905, and June 30, 1906, is set out in the following table:

OPERATIONS OF FREE EMPLOYMENT OFFICES, 1905 AND 1906.

Sex and office.	Year ending June 30, 1905.			Year ending June 30, 1906.		
	Applications for employment.	Applications for help.	Positions filled.	Applications for employment.	Applications for help.	Positions filled.
Males:						
Milwaukee	3,602	3,682	3,594	6,998	6,942	6,998
Superior	3,293	3,325	3,293	4,371	4,480	4,371
La Crosse	1,295	1,241	1,125	1,471	1,482	1,471
Oshkosh (a)	441	441	441	1,125	1,129	1,125
Total	8,631	8,689	8,453	13,865	14,033	13,865
Females:						
Milwaukee	1,117	1,238	1,115	1,267	1,359	1,267
Superior	713	1,103	713	992	1,511	992
La Crosse	580	592	516	544	730	544
Oshkosh (a)	293	293	293	664	682	664
Total	2,703	3,226	2,637	3,467	4,273	3,467

a For the year ending June 30, 1905, data are for 32 weeks only.

CHRONICLE OF INDUSTRIAL EVENTS.—This chronicle is made up of extracts taken from the newspapers of the State pertaining to events of interest to employers, workmen, or both, which occurred during the year ending October 31, 1906.

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RECENT FOREIGN STATISTICAL PUBLICATIONS.

GREAT BRITAIN.

Statistics of Proceedings under the Workmen's Compensation Acts, 1897 and 1900, and the Employers' Liability Act, 1880, during the year 1906. 35 pp. (Published by the Home Office.)

The statistical information contained in this report relates to the proceedings under the acts named in the title, and was compiled from returns made by registrars of county courts and officers of the supreme court in England, Wales, and Ireland, sheriff clerks and officers of the court of session in Scotland, and from information available from medical referees, chief registrars of friendly societies, and the returns made by railway companies to the Board of Trade.

Various summary tables are shown, those for England and Wales giving statistics of compensation under the Workmen's Compensation Acts and of damages under the Employers' Liability Act for a number of years. The reports do not give similar summaries for Scotland and Ireland, but those for England and Wales are here reproduced as indicating the workings of the acts from year to year. The following table shows, for each of the first eight years after the act of 1897 went into force, the number of cases under the Workmen's Compensation Acts in which compensation was awarded on account of death and the total and average awards. Cases in which the deceased left no dependents are not included.

TOTAL AND AVERAGE AMOUNTS AWARDED IN ENGLAND AND WALES UNDER THE WORKMEN'S COMPENSATION ACTS FOR CASES OF DEATH WHERE DEPENDENTS WERE LEFT, FOR EACH YEAR, 1899 TO 1906.

Year.	Number of cases.	Total compensation.	Average compensation.
1899	219	$184,462.47	$842.29
1900	245	194,867.78	795.37
1901	301	275,941.15	916.75
1902	264	215,845.11	817.60
1903	323	284,511.65	880.84
1904	452	390,444.79	863.82
1905	538	496,303.45	922.50
1906	553	513,195.78	928.02

In the following summary the cases of total and partial incapacity and the average weekly amount paid under the Workmen's Compensation Acts are shown for the same series of years:

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AVERAGE WEEKLY AMOUNT AWARDED IN ENGLAND AND WALES UNDER THE WORKMEN'S COMPENSATION ACTS FOR CASES OF TOTAL AND PARTIAL INCAPACITY, FOR EACH YEAR, 1899 TO 1906.

Year.	Total incapacity.		Partial incapacity.	
	Number of cases.	Average weekly compensation.	Number of cases.	Average weekly compensation.
1899	169	$2.66	249	$2.23
1900	300	2.80	236	2.62
1901	345	2.88	263	2.35
1902	242	2.96	199	2.41
1903	285	2.94	227	2.58
1904	409	2.85	241	2.59
1905	337	2.87	250	2.57
1906	326	2.80	175	2.39

A summary of the cases acted on under the Employers' Liability Act, from 1895 to 1906, together with total damages awarded, is shown in the following table:

CASES IN ENGLAND AND WALES UNDER THE EMPLOYERS' LIABILITY ACT, ACCORDING TO RESULTS, AND TOTAL DAMAGES AWARDED, FOR EACH YEAR, 1895 TO 1906.

Year.	Total cases.	Cases having each specified result.				Total damages awarded.
		Judgment for plaintiff.	Judgment for defendant.	Removed to higher court.	Otherwise disposed of.	
1895	485	111	75	1	298	$40,663.66
1896	581	148	90	1	342	59,873.95
1897	688	220	88	1	379	73,554.98
1898	681	220	126	3	332	82,016.38
1899	505	153	91	1	260	51,973.45
1900	511	158	74	2	277	54,488.62
1901	590	159	100	2	329	54,965.01
1902	548	136	70	1	341	45,406.76
1903	513	125	95	.....	293	64,468.67
1904	598	158	86	1	353	53,822.42
1905	481	130	77	.....	274	41,263.95
1906	476	114	83	.....	279	45,462.28

In the following table a comparison is made between the average amount of compensation awarded by county courts in England and Wales under the Workmen's Compensation Acts in cases of death and the average damages recovered in similar cases under the Employers' Liability Act, for each year from 1899 to 1906:

AVERAGE COMPENSATION AWARDED IN ENGLAND AND WALES UNDER THE WORKMEN'S COMPENSATION ACTS IN CASES OF DEATH, AND AVERAGE DAMAGES IN SIMILAR CASES UNDER THE EMPLOYERS' LIABILITY ACT, FOR EACH YEAR, 1899 TO 1906.

Year.	Workmen's Compensation Acts.		Employers' Liability Act.	
	Number of cases.	Average compensation.	Number of cases.	Average damages.
1899	219	$842.29	14	$558.61
1900	245	795.37	7	772.94
1901	301	916.75	9	436.77
1902	264	817.60	8	561.55
1903	323	880.84	14	1,198.44
1904	452	863.82	9	575.54
1905	538	922.50	6	665.33
1906	553	928.02	5	937.53

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In addition to the summary tables the report gives tables showing in detail the operation of the Workmen's Compensation Acts and the Employers' Liability Act in each country of the United Kingdom for the year 1906. From these tables are drawn the following statements, bringing into comparison the figures of the various countries.

The first statement shows the number of cases under the Workmen's Compensation Acts decided by arbitrations in the county courts of England and Wales, Scotland, and Ireland in 1906, the manner in which the cases were dealt with, the number for which compensation was awarded, and the total amount of compensation:

CASES, UNDER THE WORKMEN'S COMPENSATION ACTS, DECIDED BY ARBITRATIONS IN COUNTY COURTS AND COMPENSATION AWARDED, FOR EACH COUNTRY, 1906.

Country.	Number of cases.				Total cases.	Claims settled in favor of—		Total claims settled.	Compensation awarded.			
	Heard by judge.	Heard by arbitrator.	Settled by acceptance of money paid into court.	Otherwise disposed of.		Plaintiff.	Defendant.		Lump sums.		Weekly payments.	
									Number of cases.	Total amount.	Number of cases.	Total weekly amount.
England and Wales	1,404	74	240	814	2,532	1,179	245	1,424	678	$535,067.32	501	$1,334.09
Scotland	265	.....	.....	105	370	99	69	168	38	28,587.46	61	160.59
Ireland	183	.....	.....	73	256	121	26	147	58	15,469.51	64	144.37
Total	1,852	74	240	992	3,158	1,399	340	1,739	774	579,124.29	626	1,639.05

The following statement shows for each country in 1906 the number of cases which were settled by agreement, by committee, or by arbitrator, and registered in county courts under the provisions of the Workmen's Compensation Acts, and the amount of compensation:

CASES, UNDER THE WORKMEN'S COMPENSATION ACTS, SETTLED BY AGREEMENT, COMMITTEE, OR ARBITRATOR, AND REGISTERED IN COUNTY COURTS, AND COMPENSATION AWARDED, FOR EACH COUNTRY, 1906.

Country.	Number of cases settled by—			Total cases settled.	Compensation awarded.			
					Lump sums.		Weekly payments.	
	Agreement.	Committee.	Arbitrator.		Number of cases.	Total amount.	Number of cases.	Total weekly amount.
England and Wales	5,096	68	7	5,171	1,857	$550,424.69	2,230	$7,210.53
Scotland	634	.....	13	647	146	40,149.78	424	1,360.37
Ireland	147	.....	.....	147	87	29,677.05	26	69.31
Total	5,877	68	20	5,965	2,090	620,251.52	2,680	8,640.21

There were 57 cases under the Workmen's Compensation Acts carried to the court of appeal in England and Wales in 1906, as compared with 97 cases in 1905. In Scotland 19 appeals were carried to the court of session in 1906 and 22 in 1905. In Ireland there were 10 appeals to the court of appeal in 1906 and 7 in 1905. The following table shows the number of these appeals made by work-

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men, and the number by employers, and the disposition made of them, by countries, for the year 1906:

APPEALS, UNDER THE WORKMEN'S COMPENSATION ACTS, MADE BY WORKMEN, AND BY EMPLOYERS, TO COURTS OF APPEAL IN EACH COUNTRY, BY RESULTS, 1906.

Country.	Appeals by workmen.				Appeals by employers.			
	Allowed.	Dismissed.	Otherwise disposed of.	Total.	Allowed.	Dismissed.	Otherwise disposed of.	Total.
England and Wales	5	22	8	35	5	6	11	22
Scotland	4	7	.....	11	2	5	1	8
Ireland	.....	5	.....	5	1	2	2	5
Total	9	34	8	51	8	13	14	35

In addition to the appeals shown in the above table, there were in England and Wales 2 appeals by workmen to the House of Lords, one of which was allowed and the other dismissed.

On June 30, 1906, there were 48 certified schemes of compensation in operation in England and Wales, as compared with 45 on June 30, 1905. The following table shows statistics of these schemes, furnished by the chief registrar of friendly societies:

CERTIFIED SCHEMES OF COMPENSATION, AND WORKMEN AFFECTED, IN ENGLAND AND WALES, BY INDUSTRIES, JUNE 30, 1905 AND 1906.

Industry.	1905.			1906.		
	Number of schemes.	Workmen employed.	Workmen under schemes.	Number of schemes.	Workmen employed.	Workmen under schemes.
Railways	1	28,215	28,215	1	28,702	28,702
Factories	18	20,465	19,105	19	20,943	19,616
Mines	25	50,749	48,532	27	52,638	50,269
Quarries	1	906	906	1	900	900
Total	45	100,335	96,758	48	103,183	99,487

The number of cases under the Employers' Liability Act brought in the county courts, and their results, together with the amount of damages awarded where the judgment was in favor of the plaintiff, are shown, for each country, for the year 1906, in the table which follows:

NUMBER AND RESULT OF CASES, UNDER THE EMPLOYERS' LIABILITY ACT BROUGHT IN COUNTY COURTS, AND AMOUNT OF DAMAGES AWARDED, FOR EACH COUNTRY, 1906.

Country.	Cases having each specified result.					Damages awarded.	
	Judgment for plaintiff.	Judgment for defendant.	Removed to higher court.	Otherwise disposed of.	Total cases.	Number of cases.	Amount.
England and Wales	114	83	.....	279	476	114	$45,462.28
Scotland	[a] 3	20	23	109	155	[b]	[b]
Ireland	8	.....	.....	10	18	9	1,862.29
Total	125	103	23	398	649	123	47,324.57

[a] In these 3 cases (2 for total and 1 for partial incapacity) damages were assessed at 9s. 4d., 5s. 7½d., and 4s. 7½d. ($2.27, $1.37, and $1.13) weekly, respectively, under section 1 (4) of the Workmen's Compensation Act, 1897.

[b] See note [a].

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The following table shows for each of the countries the number of appeals under the Employers' Liability Act made by workmen and by employers in 1906 and the manner in which they were disposed of:

APPEALS UNDER THE EMPLOYERS' LIABILITY ACT MADE BY WORKMEN AND BY EMPLOYERS TO THE HIGH COURT OF JUSTICE IN ENGLAND, WALES, AND IRELAND, AND TO THE COURT OF SESSION IN SCOTLAND, BY RESULTS, 1906.

Country.	Appeals by workmen.				Appeals by employers.			
	Allowed.	Dismissed.	Otherwise disposed of.	Total.	Allowed.	Dismissed.	Otherwise disposed of.	Total.
England and Wales	.....	2	.....	2	2	1	.....	3
Scotland	13	7	19	39	1	3	1	5
Ireland	.....	.....	.....	.....	1	1	.....	2
Total	13	9	19	41	4	5	1	10

As in previous years, the great majority of claims under the acts were settled by agreement, and only a small percentage were made the subject of formal arbitration. It will be seen from the table below, which gives the number of deaths by accident, and of claims for compensation in case of death, respectively, in England and Wales for railways, factories, mines, and quarries, that even in cases of death, in which large sums would generally be payable and which would, therefore, be the most likely to be disputed, not more than 29 per cent came in any way before the courts; and this figure includes a good many cases finally settled out of court, and others in which the only question was the apportionment of the compensation among the dependents.

NUMBER OF DEATHS BY ACCIDENT, AND OF CLAIMS FOR COMPENSATION IN CASE OF DEATH, IN ENGLAND AND WALES FOR RAILWAYS, FACTORIES, MINES, AND QUARRIES, 1906.

Industry.	Number of deaths from accident, 1906.	Number of cases brought before county courts, 1906.		
		Workmen's Compensation Acts.	Employers' Liability Act.	Total cases.
Railways	342	76	.....	76
Factories	758	252	8	260
Mines	1,013	283	2	285
Quarries	80	14	1	15
Total	2,193	625	11	636

The proportion in 1899 was 15 per cent, in 1900 14 per cent, in 1901 18 per cent, in 1902 18 per cent, in 1903 22 per cent, in 1904 25 per cent, and in 1905 27 per cent.

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As regards claims for injury, there are no official figures of the number of persons injured whose injuries disabled them for work for more than a fortnight, and the percentage of cases litigated can not, therefore, be given. From the unofficial figures, however, which are available for certain industries, it seems probable that the number of cases taken into court is less than 1 per cent of the total number in which compensation is payable.

Compensation for Industrial Diseases. Report to the Secretary of State for the Home Department. 1907. 433 pp.

On August 4, 1906, the Secretary of State for the Home Department appointed a committee to inquire and report what diseases and what injuries, other than injuries by accident, are due to industrial occupations, are distinguishable as such, and can properly be added to the diseases enumerated in the third schedule of the Workmen's Compensation Act, 1906, a tabular list of which follows:

DISEASES ENUMERATED IN THE THIRD SCHEDULE OF THE WORKMEN'S COMPENSATION ACT, 1906.

Description of disease.	Description of process or work.
Anthrax	Handling of wool, hair, bristles, hides, and skins.
Lead poisoning or its sequelæ	Any process involving the use of lead or its preparations or compounds.
Mercury poisoning or its sequelæ	Any process involving the use of mercury or its preparations or compounds.
Phosphorus poisoning or its sequelæ	Any process involving the use of phosphorus or its preparations or compounds.
Arsenic poisoning or its sequelæ	Any process involving the use of arsenic or its preparations or compounds.
Ankylostomiasis	Mining.

The committee held 41 sittings, some of which were at Bradford, Huddersfield, Sheffield, Birmingham, Wolverhampton, Glasgow, Manchester, and Swansea, the remainder being in London. The evidence of 159 witnesses was heard, 92 of whom belonged to the medical profession, the others being almost all either employers or workmen. Many factories and works of various kinds were visited in order to view the processes under investigation, and the medical members of the committee made clinical examinations of a number of the work people engaged in them. On May 15, 1907, the committee submitted the report resulting from its investigations.

The diseases or forms of injury under consideration by the committee were classed in six groups, as follows: (1) Forms of poisoning, (2) diseases of the skin, etc., (3) eye diseases, (4) diseases of the respiratory system, (5) miscellaneous, and (6) injuries not due to accident.

To each of the diseases or forms of injury which were under consideration by the committee three tests were applied in compliance

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with the provisions and intention of the Workmen's Compensation Act, as follows:

First. Is it outside the category of accidents and diseases already covered by the act?

Second. Does it incapacitate from work for a period of more than one week, which is the minimum period for which compensation is payable under the act?

Third. Is it so specific to the employment that the causation of the disease or injury by the employment can be established in individual cases?

After applying the foregoing tests the committee reached the conclusion that the following diseases are due to industrial occupations and recommended that they be added to those enumerated in the third schedule of the Workmen's Compensation Act:

DISEASES RECOMMENDED TO BE ADDED TO THOSE ENUMERATED IN THE THIRD SCHEDULE OF THE WORKMEN'S COMPENSATION ACT, 1906.

Description of disease.	Description of process or work.
Poisoning by nitro and amido derivatives of benzene (dinitro-benzol, anilin, and others), or its sequelæ.	Any process involving the use of a nitro or amido derivative of benzene, or its preparations or compounds.
Poisoning by carbon bisulphide or its sequelæ.....	Any process involving the use of carbon bisulphide, or its preparations or compounds.
Poisoning by nitrous fumes or its sequelæ.....	Any process in which nitrous fumes are evolved.
Poisoning by nickel carbonyl or its sequelæ.....	Any process in which nickel carbonyl gas is evolved.
Arsenic poisoning or its sequelæ.....	Handling of arsenic, or its preparations or compounds.
Lead poisoning or its sequelæ.....	Handling of lead, or its preparations or compounds.
Poisoning by *Gonioma Kamassi* (African boxwood) or its sequelæ.	Any process in the manufacture of articles from *Gonioma Kamassi* (African boxwood).
Chrome ulceration or its sequelæ.....	Any process involving the use of chromic acid or bichromate of ammonium, potassium, or sodium, or their preparations.
Eczematous ulceration of the skin produced by dust or caustic or corrosive liquids, or ulceration of the mucous membrane of the nose or mouth produced by dust.	.....
Epitheliomatous cancer or ulceration of the skin or of the corneal surface of the eye, due to pitch, tar, or tarry compounds.	Handling or use of pitch, tar, or tarry compounds
Scrotal epithelioma (chimney-sweeps' cancer).....	Chimney sweeping.
Nystagmus.....	Mining.
Glanders.....	Care of any equine animal suffering from glanders; handling the carcass of such animal.
Compressed air illness or its sequelæ.....	Any process carried on in compressed air.
Subcutaneous cellulitis of the hand (beat hand)....	Mining.
Subcutaneous cellulitis over the patella (miners' beat knee).	Mining.
Acute bursitis over the elbow (miners' beat elbow).	Mining.
Inflammation of the synovial lining of the wrist joint and tendon sheaths.	Mining.

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DECISIONS OF COURTS AFFECTING LABOR.

[Except in cases of special interest, the decisions here presented are restricted to those rendered by the Federal courts and the higher courts of the States and Territories. Only material portions of such decisions are reproduced, introductory and explanatory matter being given in the words of the editor. Decisions under statute law are indexed under the proper headings in the cumulative index, page 417 et seq.]

DECISIONS UNDER STATUTE LAW.

EMPLOYERS' LIABILITY—EMPLOYMENT OF CHILDREN—AGE LIMIT—CERTIFICATES—NEGLIGENCE—*Platt v. Southern Photo Material Company, Court of Appeals of Georgia, 60 Southeastern Reporter, page 1068.*—This case was before the court of appeals on appeal from the city court of Atlanta, in which the defendant company had been awarded judgment. Platt, an infant, had sued by his next friend to recover damages for injury received in his employment, said employment being, as was alleged, in violation of the child labor law of the State, enacted in 1906. (Page 98, Acts of 1906; for the law in full see page 234, Bulletin No. 68.)

The law absolutely prohibits the employment of children under 10 years of age, and, except under specified conditions, of those under 12 years of age. Other provisions of the law to be effective at a date later than the occurrence of the accident need not be mentioned. It is required, however, that an affidavit of the age of all children employed be kept in the office of the employer.

Platt was 13 years of age, but his employer had secured no affidavit of the fact. He was put to work on a dangerous machine whereby he was injured. The case turned on the degree or nature of the negligence involved, the trial judge holding that no case was made by the pleadings of the plaintiff. The appellate court reversed this judgment and returned the case for further proceedings. The points of law involved are clearly presented in the syllabus, which was prepared by the court. The pertinent portions thereof follow:

2. The employment of a child under the age prescribed by the child labor law (Acts 1906, p. 98) in a factory or manufacturing establishment is negligence per se; and, if the child is injured by reason of being so engaged, he has as a matter of law a cause of action against the employer. However, if the child employed is above the designated age, a failure on his employer's part to take and file the affidavit prescribed by section 5 of that act, though

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criminal, is not such an act of negligence, relative to the child, as to make the employer liable as a matter of law for his injuries.

(a) The words "per se," when used as descriptive of negligence, merely refer to the method by which its existence is to be ascertained from the facts of the case. If the law-making power in dealing with a subject involving duties goes into concrete specifications as to what shall or shall not be done, the court takes judicial cognizance that the precise duty exists, and that a breach of it is negligence. This is called negligence per se in contradistinction to those wrongs or derelictions that arise from violations of those duties which have received recognition in the law, but which have not been defined, or have been defined only in such general or abstract language that there must be a finding as a question of fact (usually by a jury) that the particular transaction involves a violation of the duties so imposed before the existence of negligence is to be regarded as established.

(b) Before negligence per se, or any other form of negligence, is actionable in a given case, it must appear that the broken duty was due the plaintiff personally or as a member of a class; also, that it has directly and proximately caused legal injury to him.

(c) In determining whether the violation of a statute is such negligence as to support an alleged cause of action, the court is called upon to examine the law in respect to its purposes; for, if it appears that notwithstanding the violation, none of the things contemplated and sought to be guarded against have ensued, or that the plaintiff is not the person or does not belong to the class to whose benefit or for whose protection the enactment was made, the court will not declare that there is a case of negligence per se as to that cause of action or that plaintiff.

3. The child labor law by specifically providing that the employment of children under a designated age in certain occupations shall be absolutely unlawful has in nowise limited the general law in regard to putting immature persons of tender years to work at or near dangerous machinery. In a case not covered by the statute the question of the defendant's negligence in employing the young person at the particular occupation is usually one for the jury.

EMPLOYERS' LIABILITY—FELLOW-SERVANT LAW—CONTRACTS WITH RELIEF DEPARTMENT—RELEASE—VALIDITY—*Atlantic Coast Line Railroad Company v. Beazley, Supreme Court of Florida, 45 Southern Reporter, page 761.*—Robert Beazley had recovered damages in the amount of $20,000 in the circuit court of Jefferson County for injuries received while in the employment of the company named, and the company appealed. Beazley was employed as flagman on a freight train, and in pursuance of orders given by the conductor in charge took a position on the rear car, from which he was thrown by an alleged improper and negligent adjustment of a switch by the conductor, as a result of which he suffered the injuries complained of. Numerous assignments of error were submitted, and among other defenses was a plea that Beazley was a member of a relief association

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maintained by the railroad company and its employees, and that his agreement with the association precluded suits for damages after the acceptance of benefits from the funds of the association. The agreement contemplated the payments of benefits at a fixed rate for 52 weeks, if disability continued so long, and at one-half the same rate for any remaining period of disability. It was in evidence that certain expenses of treatment, etc., were met by the association, and that the sum of $8.50 had been paid Beazley in addition thereto.

The questions of fellow-service under the law of the State (which was copied from the law of Georgia on this subject), of the constitutionality of the statute which declares void all contracts restricting the legal liability of railroad companies for injuries to employees, the status of such contracts as matter of public policy, and the effect of a release on the employer's liability were discussed in detail, and some of them at great length. The judgment of the lower court was affirmed by a divided court. The majority opinion was delivered by Chief Justice Shackleford, who spoke in part as follows:

It has been distinctly and repeatedly recognized by the Supreme Court of Georgia that the conductor of a railroad train is not a fellow-servant with brakemen and flagmen, but as to them occupies the position or relation of vice-principal. The statute having had this known and settled construction put upon it by the Georgia court prior to our adoption thereof, we must be held to have adopted such construction also. However, we fully approve of this distinction and of the language which we have quoted from the Georgia decisions.

Of course, a flagman or other employee of a railroad company would not be warranted or justified in obeying an order of the conductor commanding him to go into a place or position of extra hazard, unusual danger, or great peril, which would be readily apparent, or to assume a rash or dangerous risk that would be patent to any reasonably cautious or prudent man and repugnant to good judgment and common sense. An employee who obeyed such an order as we have indicated above would do so at his own risk and peril.

If the plaintiff, within the scope of his employment or in the ordinary discharge of his duties as a flagman of defendant, was ordered and required by the conductor to station himself on the top of the car or cab for the purpose of giving signals to the engineer, can it be said that he was negligent in obeying such order and that such negligence on his part occasioned or contributed to the injury? In order to answer this question in the affirmative, we would have to hold that we judicially know that it is necessarily hazardous or dangerous for a flagman in the employ of a railroad company to station himself on the top of a car or cab for the purpose of giving signals to the engineer, in obedience to the orders of the conductor. It is a matter of common knowledge and every-day observation that employees of railroad companies, whether flagmen or brakeman, in the ordinary discharge of their duties, do go on top of the cars of freight trains—station themselves thereon—even when the train is moving.

As is well said on page 273 (2d Ed.) of Buswell's Personal Injuries: "An employee, acting in the strict line of his duty, may properly do

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that which, in a stranger, would clearly be negligent, but which may not estop the employee from recovery against his master."

We are clear that no error was committed in overruling the demurrer to the declaration. Therefore the first assignment must fail.

Judge Shackleford then took up the question of the legality of contracts with relief departments, and in the course of his discussion gave a review of all the cases known to him bearing on the point. He said:

We take up the first contention of plaintiff in support of his demurrer to the plea, "that the contract and agreement set up is contrary to public policy." Before undertaking to pass upon this contention it may be well for us, if possible, to get a clear idea of what is meant by the term "public policy."

As was said by Justice Story in section 675 of volume 1 of his work on Contracts, in language which has been often quoted with approval by the courts: "Public policy is in its nature so uncertain and fluctuating, varying with the habits and fashions of the day, with the growth of commerce and the wages of trade, that it is difficult to determine its limits with any degree of exactness. It has never been defined by the courts, but has been left loose and free of definition, in the same manner as fraud. This rule may, however, be safely laid down: That whenever any contract conflicts with the morals of the time, and contravenes any established interests of society, it is void, as being against public policy."

After further citations, Judge Shackleford said:

No doubt, guided by such principles as those embodied in the foregoing quotations, the various judges who have been called upon to pass upon such contracts as we are now considering have nearly all refused to pronounce them void on the ground of public policy, and upon this point we are glad to be able to find ourselves in full accord with them. The reasoning used by them in some of the cases which we have cited seems to be conclusive upon this point and simply unanswerable.

All parties litigant who are sui juris, whether railroad corporations or their employees, in the eyes of the law, before the courts, stand upon an equal footing, entitled to equal rights and protection, and none to special privileges. In no sense of the word can railroad employees be said to be wards of the court, nor would they wish to be so regarded. (See Western and Atlantic R. Co. *v.* Bishop, 50 Ga. 465.) It may well be that plaintiff made a rather hard bargain with defendant; but with that we have nothing to do, so long as no fraud or deception was practiced and the contract was legal in all respects. (Scotch Manufacturing Co. *v.* Carr (Fla.) 43 South. 427.) That is the question with which we have to deal.

We now come to the next contention of plaintiff: That such a contract as is set up in the plea is void because in contravention of our statute. If this contention be tenable, such a contract would also be opposed to public policy, and therefore void for that additional reason. There is no better way for a State to declare its public policy than through its lawmaking power. We do not think that the power of the legislature to enact section 3, c. 4071, Laws of 1891 [declaring restrictive contracts void] can be questioned. As

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was said by the United States Supreme Court in Frisbie *v.* U. S., 157 U. S. 160, text 165, 15 Sup. Ct. 586, 39 L. Ed. 657: "While it may be conceded that, generally speaking, among the inalienable rights of the citizen is that of the liberty of contract, yet such liberty is not absolute and universal. It is within the undoubted power of government to restrain some individuals from all contracts, as well as all individuals from some contracts." It is undoubtedly true, as plaintiff contends, that "a contract to do what the law forbids can not be enforced, whether it be malum in se or only malum prohibitum. An act in contravention of a statute, the common law, or a treaty, although not immoral, is equally invalid with one that is malum in se." (Wood's Law of Master and Servant (2d Ed.) sec. 198.) While this is an unquestioned legal principle, it will not avail plaintiff in support of his contention, unless the contract as set out in the plea is given the effect of restricting the liability of a railroad company as to damages recoverable by one of its employees for personal injuries sustained as contemplated by our statute. This question we must now answer.

Suppose there had been no contract and the employee, after the occurrence of the injury, had executed a valid release by way of compromise and full settlement of all claims for damages he then had against the railroad company for damages, in the absence of any fraud, imposition, or deception; could its validity be called in question? Have not parties the right to compromise and settle any claims, whether arising ex contractu or ex delicto, without recourse to litigation, and does not the policy of the law favor such settlements? If this be true, then how could the fact that the employee, prior to the injury, had entered into a contract by which he agreed, in the event of the happening of an injury to him, he would, after its occurrence, make his election either to proceed in an action at law against his employer for damages or to accept the benefits provided by the relief department, vitiate or impair a valid release so executed by such employee, after he had made his election to accept such benefits? In other words, would not a valid release, duly executed under such circumstances, be just as valid and binding as though there had been no precontract? We see no reason why it would not. This being so, the contract can be ignored and disregarded. In either case it seems to us that such a release, founded upon a valid consideration, could be successfully pleaded in bar as a defense to any action which such employee might institute, without reference to the contract; for it would be the release in both cases which would constitute the defense. If the plaintiff had accepted such benefits and the same be well and sufficiently pleaded as a defense, it would constitute a bar to the action. We fail to see wherein the contract in question, construed as not effecting a valid release, in any way contravenes our statute.

It is further contended by plaintiff that, even if we should hold that the contract in question is not void on the ground of public policy, or because it contravenes our statute, or because it is ultra vires, and conceding all the matters of fact set up in the plea which are sufficiently pleaded to be true, as we must do upon demurrer, still they do not constitute a valid and sufficient defense to the action, and therefore the demurrer to the plea was rightfully sustained. It is argued that the plea shows a lack of mutuality and a want of con-

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sideration moving from the defendant to the plaintiff for the contract or release of claims for damages against the defendant.

It seems to us that the plea is defective in many respects. First, it fails to show what amount of benefit per week, "for a period not longer than 52 weeks," plaintiff was entitled to receive; second, it fails "to show what sums of money, if any, the defendant company had theretofore contributed out of its own funds to the support of the relief association;" third, it fails to "show what other beneficial acts, if any, the defendant company had done and performed toward the maintenance of the association," further than that the defendant company "assumed general charge of the department and guaranteed the fulfillment of its obligations, and has taken charge thereof continuously, and has the custody of the moneys belonging to the relief fund, and has become responsible for the safe-keeping of said fund, and guaranteed to pay into the fund interest at the rate of 4 per cent per annum on monthly balances in its hands, and to advance from its own funds money to pay benefits when the amount contributed by the members, with interest and other income, is not sufficient to pay benefits as they become due, and to supply the necessary facilities for conducting the business of the department, and to pay all the operating expenses thereof, and has, in pursuance thereof, complied with, performed and discharged all of said obligations before mentioned upon the part of said defendant company to be complied with, performed, and discharged, and has also furnished the necessary hospital buildings and furniture, beddings, instruments, utensils, appliances, surgeons, and nurses for the care of employees who become disabled by injuries, sickness, or otherwise," whatever all this may mean. It is difficult to tell just what the railroad company had ever promised or obligated itself to do for or on behalf of the relief association. As to what acts it ever really did it is simply impossible to ascertain from the plea. We find from the averments in the plea that the only amount of benefits paid direct to plaintiff on account of the injuries sustained by him by reason of the alleged negligence of the defendant, and which injuries were alleged in the declaration, to which this plea was interposed as a defense, to be permanent in their nature, was the munificent sum of $8.50. It is true that the plea also avers that "there was also paid by said department the sum of $50 to certain physicians for care and surgical attendance upon said plaintiff, and also the sum of $42 for board for plaintiff; and also the sum of $8 for dressings of plaintiff's injuries, making a total of $100 expended by said relief department for medical attention, care, and board for said plaintiff." But who furnished this money to the relief department we are not advised. For aught that appears to the contrary, all of these sums may have been paid out of the monthly amounts contributed by the plaintiff himself, or by the plaintiff together with the other members of the association. One thing, however, does plainly appear: All of these amounts, by whomsoever the money may have been furnished, were deducted from the benefits coming to plaintiff "under the rules and regulations of said relief department," though we are not advised as to the provisions of such rules and regulations.

The obligations of the defendant under the contract set up in the plea can not be regarded as a consideration for the release, for, as we have already seen, that would give to the contract an effect which

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would make it void under the statute. In fact, as we read the plea, the contract does not purport to be a release. We do not see how it well could be so considered. A valid plea setting up a release should aver the acceptance by one competent to do, under conditions making such acceptance lawful, of something of value as a settlement and discharge of the defendant's liability.

Much more might well be said, but further discussion and comment seem unnecessary. The plea is fatally defective, not only for the reasons pointed out, but for others as well. The circuit judge refused to permit it to stand as a defense in his court, and we thoroughly approve of his action.

EMPLOYERS' LIABILITY—RAILROADS—AUTOMATIC COUPLERS—REPAIR—*Missouri Pacific Railway Company v. Brinkmeier, Supreme Court of Kansas, 93 Pacific Reporter, page 621.*—Henry Brinkmeier was injured while acting as brakeman for the company named, on account of the defective condition of an automatic coupler. The Federal law makes it unlawful for common carriers to use cars in interstate traffic unless they are "equipped with couplers coupling automatically by impact," and provides that employees injured by the use of a car contrary to this provision shall not be deemed to have assumed the risk. Brinkmeier recovered damages in the district court of Sedgwick County, from which judgment the company appealed and secured a reversal with orders for a new trial.

The case turned first on the point of the duty of the road as to maintenance, as to which Judge Graves, who delivered the opinion of the court, said:

There is a sharp controversy between the parties as to what constitutes a compliance with section 2 of the Federal statute, hereinbefore quoted. It is insisted by the defendant in error [Brinkmeier] that every car used in interstate traffic must be equipped with the prescribed appliance, and at all times thereafter be in proper repair. If because of any defect therein an employee is injured, the railway company will incur the burden imposed by the provisions of section 8, however diligent it may have been in an effort to discover and repair the defect. On the other hand, it is urged that, when a car is once supplied with the appliance as required by law, the company will not in case of injury be subject to the provisions of section 8, unless it has been negligent with reference to keeping such appliance in repair. The trial court gave the jury instructions which read: "You are instructed that under such act it was the duty of the defendant railway company, not only originally to equip its cars with automatic couplers, as required by said act, but also to keep them in proper condition so that they could at all times be coupled or uncoupled without the necessity of men going between the ends of the cars to assist in coupling or uncoupling them. And the railway company was bound to know at its peril that the coupler attached to the car in question was in proper working condition, and the fact that the defendant company may not have known of its defects or defective condition, if you find that it was defective, does not in any manner

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excuse its unlawful use. You are further instructed that, if you find the plaintiff has established his injuries, and you find the coupler would not couple automatically by impact, he is entitled to recover for his injury, unless you further find that the plaintiff was negligent in the premises which directly contributed toward his injury."

Under our construction of the statute these instructions are erroneous: They impose a materially greater burden upon common carriers than the law contemplates. The duty prescribed by them can not be found in the express language of the statute, and therefore must have been placed therein by construction. If the language is open to construction, then it must be construed so as to fairly carry out the legislative intent as described by the act. In our view, the law is satisfied as to any specific car, whenever that car has been supplied with the prescribed appliance. Whenever an automatic coupler, such as the act of Congress requires, is attached to a railway car, it stands in the same category as all other appliances and instrumentalities used by railway companies. Thereafter it is the duty of the company to use reasonable and ordinary care and diligence to keep this and all other equipments in good repair and safe condition for the use of its employees, and a failure to do so constitutes negligence. This was the law before the act of Congress was passed, and that act did not change the law in this respect. No degree of diligence within the limits of a reasonable possibility would be sufficient to enable a railroad at all times and under all circumstances to keep its car couplers in such a state of repair as would prevent a brakeman disposed to encounter danger, as the plaintiff did in this case, from receiving injury. So far as the evidence shows, the coupler in question in this case may have been thrown out of place by a jam received immediately before the plaintiff discovered it, in which case it would have been impossible for the company to have known of and repaired the defect. Statutes should not be extended by constructions so as to produce such unreasonable results.

After the opinion from which the above extracts are taken had been filed, the Interstate Commerce Commission asked for a rehearing and the privilege of representation by counsel. In view of the nature of the question involved these requests were granted, but the position of the court as to the duty of maintenance and repair was unchanged

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EMPLOYERS' LIABILITY—RAILROADS—AUTOMATIC COUPLERS—REPAIR—*St. Louis and San Francisco Railroad Company v. Delk, United States Circuit Court of Appeals, Sixth Circuit, 158 Federal Reporter, page 931.*—This case is similar to the one above, involving the same points of law and leading to a similar conclusion. In the circuit court of the United States for the western district of Tennessee, the act in question was cited in the charge to the jury so as to convey the idea that the railroad company was under the absolute duty to maintain the couplers so that they would couple automatically at all times while in use in interstate commerce. This instruction was made the basis of an appeal, and was held to be erroneous by the court of appeals, Judge Richards dissenting.

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The car had reached the city of its destination, but, on account of defects in a coupler, was refused by the local railroad to which it was offered for delivery to the consignee, and was at the time of the accident complained of on a repair track awaiting the repair of the defective coupler. In the meantime Delk was ordered to assist in getting out certain cars that were on this track, and was injured in the attempt on account of the defect. Judge Lurton held that the fact that the car was on the repair track withdrew it from the application of the law, inasmuch as it was no longer in use in interstate commerce. The majority opinion held that the law applied, however, Judge Severens saying:

Its cargo had not yet reached its destination, and was not then ready for the delivery to the consignee wherewith the commerce would have ended. Its stoppage in the yard was an incident to the transportation. The injury to the coupler was one easily repaired without being taken to a repair shop, and the car was being hauled upon the track when the accident occurred. (Johnson *v.* Southern Pacific Co., 196 U. S. 1, 25 Sup. Ct. 158 [Bulletin No. 56, p. 303]; Chicago, M. & St. P. Ry. Co. *v.* Voelker, 129 Fed. 522, 65 C. C. A. 226 [Bulletin No. 56, p. 300.])

As to the construction of the statute, Judge Severens said:

The court below gave the law to the jury by stating the language of the statute, and in such a way as to lead the jury to suppose that it imposed an absolute duty to keep the car in order, and applied to the circumstances of the case on trial. But the duty of the court goes deeper than this, where the statute, in order to be understood, requires construction. It is bound to consider the conditions to which the statute applies. And if it is seen that in its practical application doubts and difficulties arise, it becomes its duty to scrutinize the statute, and resolve whether, by a sensible construction of it, those difficulties may be avoided. Being bound to administer the law, it is obliged to determine what the law really means and explain it to the jury. These duties are inseparable, but they are equally obligatory. The general rules of interpretation are presumed to be familiar to the courts, and it is the right of the parties who are affected by the result to have them properly applied. In 2 Sutherland on Statutory Construction, sec. 453 (2d ed.), it is said:

"Statutes are but a small part of our jurisprudence. The principles of the common law pervade and permeate everything which is subject to legal regulation. Such law defines rights and wrongs of every description and the remedies for public and private redress. By its principles statutes are read and construed. They supplement or change it, and it adjusts itself to the modification and operates in conjunction and harmony with them. * * * Rules of interpretation and construction are derived from the common law, and since that law constitutes the foundation, and primarily the body and soul of our jurisprudence, every statutory enactment is construed by its light and with reference to its cognate principles."

By "doubts and difficulties" we, of course, do not mean those which are engendered by the predilection of the court or its own notions of what the law ought to be, but doubts and difficulties

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which are inherent in the nature of the problem to be solved. These propositions we presume no one will deny, and it may be thought a work of supererogation to state them. But they are not always remembered by those who make unthinking haste to reach what they believe to be a desideratum. Questions of difficulty arise in the application of this statute. Some of them have been solved or attempted to be solved by the courts to which they have been presented.

The statute clearly and positively devolves upon the railroad company the duty of equipping its cars with those [automatic] couplers, and makes it a penal offense to use its cars without them. All this is simple enough. The company could make no mistake about it. But we can find no warrant for imposing such drastic consequences upon the failure of the railroad company to at all times and under all circumstances have the couplings in repair. One of the recognized rules of construction of statutes is that we are to look to the state of the law when the statute was enacted in order to see for what it was intended as a substitute, and another is that it is not to be presumed that the statute was intended to displace the former law, whether it be statute or common law, further than was fairly necessary to give it place and operation. Now, prior to this enactment, other methods were employed by railroad companies for coupling their cars—generally, if not universally, by a link and pins. And the law was that in respect of this coupling the company was bound to exercise that reasonable degree of diligence in keeping them in repair which was proportionate to the danger of their use. The rule was expressed in various forms, but that was the substance.

Conceiving that the new form or method of automatic coupling by impact would mitigate the danger to employees, Congress enacted this statute to compel the carrier to substitute the new form for the old in operating its cars; and of course it is necessarily implied that it shall be done in good faith as is always implied in the enactment of laws. If the carrier does this, it has complied with the requirement of the statute, and the old method is displaced by the new. But it is now proposed to add to the obligation of the carrier by requiring that he shall be bound to see that the substituted coupling shall at all times and places be in good order, a burden well-nigh to impossible. The coupling apparatus on railroad cars is subject at all times while they are being operated, to almost constant wrench and strain and liability to breakage. Much of the time the cars are connected up in trains running on time schedules, and under orders of train dispatchers which must be observed, or fatal and disastrous consequences ensue. Moreover, accidents to the couplings or unknown defects appear at places more or less remote from repair shops. It is reasonable and just to require that the carrier should exercise a high degree of care to keep the couplings in proper condition. But it seems unjust and unreasonable to say that having fulfilled its utmost duty in this regard, it should be held responsible for conditions which may occur without its fault.

Judge Richards dissented on this point, using in part the following language:

The car which caused the injury had a defective coupler. It would not couple automatically. As a result, the plaintiff below,

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under orders, went between it and the car it was to be coupled to, and tried to force a coupling by using his foot. In consequence, his foot was caught in the impact of the cars and seriously injured.

This is a case peculiarly within the provisions of the act. A car loaded and being used in moving interstate traffic was found with a defective coupler. The car was marked "in bad order," and a repair piece sent for. After thus being notified of its condition, the car should have been withdrawn; but it was not, and the company kept on moving it about in connection with other cars, and finally ordered the injured employee to couple it to another car. This he tried to do, with the natural result, and he has been crippled for life. The case amply justifies the verdict, and the judgment should be affirmed.

EMPLOYMENT OF CHILDREN—AGE LIMIT—CONSTITUTIONALITY OF STATUTE—*Bryant v. Skillman Hardware Company, Supreme Court of New Jersey, 69 Atlantic Reporter, page 23.*—This was an action by Lewis T. Bryant, State commissioner of labor, to recover a penalty of $50 from the company named for a violation of the child labor law of March 24, 1904, which prohibits the employment of children under 14 years of age in factories, workshops, etc. Judgment was in favor of the commissioner in the district court of Trenton, from which the company appealed. The appeal was based on the question of the constitutionality of the statute, which was attacked on a variety of grounds, but two of which are of interest here. The statute was declared constitutional, and the judgment of the lower court was affirmed, as appears from the following extracts from the opinion of the court, which was delivered by Judge Garrison:

A preliminary ground for reversal is "that the alleged violation of the act in question is not within the spirit of the act." The contention made under this head is based upon the proposition that "the spirit, object, and intention of this legislation is the promotion and advancement of education," and the argument is contained in the following interrogation: "How can the employment of a boy during vacation, who regularly attends school, be a breach within the spirit of the act?"

The plenary answer to this contention is that the object of the statute in question is not the advancement of education, but the promotion of the health, welfare, and safety of the persons to whom it applies; and that the circumstance that a minor person within its provisions attends school while otherwise employed in violation of the act instead of avoiding the act is a peculiarly obnoxious instance of its violation.

The first constitutional ground of attack upon the statute is that it violates section 1 of article 1 of the State constitution, which is in these words: "All men are by nature free and independent, and have certain natural and unalienable rights, among which are those of enjoying and defending life and liberty, acquiring, possessing and protecting property, and of pursuing and obtaining safety and happiness."

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The argument advanced under this point nullifies the words "all men" in the section just quoted by making them mean "all minors," and ignores the entire mass of legislation and judicial decision that has grown up upon the practically unquestioned assumption that minors are not men, and that until they become men they are, as regards legislation aimed at their welfare and protection, wards of the State.

The claim that the act is special or private may be passed without discussion in view of what has been already said, as, also, may the contention that the statute abridges the privileges of citizens of the United States. [Cases cited.]

Finding no constitutional infirmity in the statute under which the present conviction was had, the judgment brought up by this appeal is affirmed.

HOURS OF LABOR OF RAILROAD EMPLOYEES—CONSTITUTIONALITY OF STATUTE—IMPLIED REPEAL OF STATE BY FEDERAL STATUTE—*State v. Northern Pacific Railway Company, Supreme Court of Montana, 93 Pacific Reporter, page 945.*—The Montana law of February 5, 1907, chapter 5, Laws of 1907, limits the hours of labor of train crews, etc., to 16 per day of 24 hours, and requires a period of 8 hours for rest before again going on duty. (For the law in full, see Bulletin No. 72, page 646.)

The company named was found guilty of a violation of the law in the district court of Lewis and Clark County, and appealed. The appeal was based on two grounds: First, that the law was unconstitutional; second, that if constitutional it was repealed by the enactment of the Federal statute of March 4, 1907, 34 Stat. 1415. (See Bulletin No. 71, pages 401, 402.) Both contentions were denied by the court, the opinion of which was delivered by Judge Brantly, who spoke in part as follows:

Upon the first proposition the argument is that the grant of power to Congress under the Federal Constitution "to regulate commerce * * * among the several States * * *" is exclusive; and since the defendant is, and at the time the alleged offense was committed was, engaged in interstate commerce, and the act in question assumes to impose burdens and restrictions upon it in the transaction of its business in this connection, as well as upon that done exclusively between points within the State, the act is the result of an unwarranted assumption of power by the legislature. The purpose of the legislature in the enactment of this statute was to secure better service at the hands of all persons operating lines of railroad within or through this State, and at the same time to promote the safety of the lives and property intrusted to them. It is apparent to every one that a continuance beyond a reasonable time each day in the performance of the exacting duties incident to an employment that [illegible]ys attended with danger tends to impair both the health and [illegible] of employees, and should not be permitted except in cases [illegible]y. The legislature was seeking, then, by an exercise of [illegible]ower of the State, not only to serve the general welfare of

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the public, but also to preserve the lives and health of all persons employed in, or having direct connection with, the running of trains. Now, the police power is inherent in the several States. It remains with them notwithstanding the grant of power by them to the Federal Government, and may be exercised by their several legislatures upon all matters coming within its purview, without limitation or restriction. [Cases cited.]

On principle we can not distinguish between the effect of a statute such as that of the State of Alabama, which was considered in Smith *v.* Alabama, 124 U. S. 472, 8 Sup. Ct. 564, 31 L. Ed. 512, and the one here involved. In that case, in order to secure the maximum of efficiency in railroad engineers, they were required to submit themselves to an examination to test their mechanical skill and knowledge, and to be licensed by a competent board of examiners, before they could be employed by any railway company. An additional requirement was that they must be men of careful and temperate habits. The statute in question applied generally to the business of railroads, without making any distinction between that which was strictly interstate commerce, and that which was commerce within the State exclusively. So in Nashville, C. &. St. L. Ry. Co. *v.* Alabama, 128 U. S. 96, 9 Sup. Ct. 28, 32 L. Ed. 352, and for the same reason, all employees having charge of or directly connected with the operation of trains were required to submit themselves from time to time to examination to test their ability to distinguish color signals, and to obtain a license certifying to their efficiency in this regard, before they could enter or continue in the service of any railroad operating in the State. The mechanical efficiency or personal habits of engineers, or their capacity or that of other railway employees to distinguish colors, and hence their greater efficiency in the business of handling trains, does not more nearly concern the public safety than does the necessity for sleep and rest, in order that they may have full possession of their mental powers and physical strength to aid them in the performance of their responsible duties. Nor does the requirement in the one case more seriously interfere with or restrain commerce than in the other. In all such cases an additional burden is imposed upon the railroad corporation, and to the extent of this additional burden there is an interference with the conduct of its business. The cases cited, it seems to us, are conclusive; and, while we think it properly conceded that the subject, so far as it affects interstate commerce, falls within the power of Federal legislation under the Constitution, yet, in the absence of such legislation on the subject, it is a matter for State control, under the exercise of its police power, to provide for the public safety and also for the health and lives of railroad employees themselves.

It remains to inquire whether the law is still operative, notwithstanding the act of Congress, referred to above, deals with the same subject. The State statute became a law on February 5, 1907. The Federal statute does not by its own terms become operative until March 4, 1908. This being the situation, did it upon its approval invalidate the State statute, on the theory that it is a direct utterance of Congress under its constitutional power upon the same subject? The two acts embody substantially the same provisions, and it is clear that it was the intention of Congress to assume control of the subject, so far as it concerns companies engaged in interstate com-

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merce. Counsel for appellant cite no authority in support of their contention, nor do we know of any directly in point. We do not see how an act which does not by its own terms become a rule of conduct until a future time can be said to displace another existing rule on the same subject during the interval between the time of its enactment and the time it becomes operative, even though the existing rule be inconsistent with it, in the absence of some express or implied declaration of a purpose that such shall be the result. Legislation is not effective for any purpose until it becomes operative. We hold that the State statute, which was valid and in force at the time of its passage, remains in force until the act of Congress becomes effective.

PAYMENT OF WAGES IN SCRIP—UNLAWFUL DISCRIMINATION—CONSTITUTIONALITY OF STATUTES—*Union Sawmill Company v. Felsenthal, Supreme Court of Arkansas, 108 Southwestern Reporter, page 217.*—A. and L. Felsenthal, merchants, sued the company named to recover in money the value of a large number of store orders issued by the company in payment of wages to its employees and recovered judgment in the circuit court of Union County, from which the company appealed. These orders were on the company store operated by the sawmill company, and the company denied their validity in the hands of A. and L. Felsenthal. The case turned on the provisions of law of the State, three statutes being considered by the court. The act of 1905, act No. 143, relating to the payment of wages to employees of corporations, companies, firms, or persons engaged in any trade or business, provides that "the provisions of this act do not apply to coal mines, when not less than twenty men are employed under the ground," and repeals all acts in conflict therewith. This act is practically identical with an act of May 23, 1901, except that the proviso in the latter reads "The provisions of this act do not apply to coal mines when less than twenty men are employed under the ground." The act of May 23, 1901, also repealed conflicting acts. The third statute was one of different form, approved April 15, 1901, providing for the redemption in cash, at its face value, of all scrip, punch outs, etc., issued as evidence of indebtedness to laborers.

This act follows:

SECTION 1. All firms, companies, and corporations using coupons, script [scrip], punch outs, store orders or other evidence of indebtedness to pay other or its laborers and employees for labor, and shall, if demanded, redeem the same in the hands of such laborers or employee, or other bona fide holders, in good and lawful money of the United States: *Provided,* The same is presented, and redemption, demanded, of such firm, company or corporation using same as aforesaid, at a regular pay day of such firm, company, or corporation, to laborers or employees, or if presented, and redemption demanded as aforesaid by such laborers or employee or bona fide

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holder, at any time not less than 30 days from the issuance or delivery of such, coupons, script [scrip], punch out, store order or other evidence of indebtedness, to such employees, laborers or bona fide holders. Such redemption to be at the face value of said script [scrip], punch out, coupons, store order, or other evidence of indebtness [indebtedness.]

SEC. 2. *Provided further*, That said face value shall be in cash the same as its purchasing power, in goods, wares, and merchandise, at the commissary company's store or other repository of such company, corporation or firm, as aforesaid.

SEC. 3. *Be it further provided* That any employee, laborer, or bona fide, holder referred to in sec. 1 of this act, upon presentation, and demand for redemption, of such script [scrip], coupon, punch out, store order, or other evidence of indebtedness, aforesaid and upon refusal of such firm, company, or corporation, to redeem the same in good and lawful money of the United States, may maintain in his, her or their own name, an action before any court of competent jurisdiction, against such firm, company, or corporation, using same as aforesaid for the recovery of the value of such coupons, script [scrip], punch out, store order, or other evidence of indebtedness as defined in section one (1) of this act.

The supreme court affirmed the judgment of the court below, basing its decision on the validity of the earliest of the three acts named above, while holding that the later acts were unconstitutional. (a)

The points involved are discussed in the following extracts from the opinion of the court, which was delivered by Judge Battle. After reproducing the act of 1905, he said:

This act is a copy of an act of the same title, approved May 23, 1901. (Acts 1901, p. 309.) Are these acts valid?

They make an unlawful discrimination. They provide that none of their provisions shall "apply to coal mines, when not less than twenty men are employed under the ground." These provisos render them wholly void. The effect of such provisions is fully discussed in Ex parte Deeds, 75 Ark. 542; 87 S. W. 1030.

Acts 1905, and act May 23, 1901, being unconstitutional and repealing only the acts in conflict with them, leave the act entitled "An act to compel corporations to redeem scrip, punch outs or other indebtedness in cash," approved April 15, 1901 (Acts 1901, p. 167), if valid, in full force. [Cases cited.]

The judge then quoted the act at length and, continuing, said:

Is this act valid?

The appellant is a corporation, and we need not determine its effect only as to corporations.

Corporations derive their right to contract from the legislature. They possess those powers or properties which the charters of their

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a It may be noted that Act No. 315, Acts of 1907, is in effect a copy of the law of 1905, only changing the proviso so as to read "less than twenty men," instead of "not less than twenty men," thus restoring, in this respect, the form of the act of May 23, 1901. This act evidently falls under the same condemnation as the act of May 23, 1901, and that of 1905, leaving the act of April 15, 1901, still in force.

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creation confer upon them, either expressly or as incidental to their existence; and these, under the constitution of this State, may be modified or diminished by amendment or extinguished by the repeal of the charters. But the legislature can not take from them the right to contract; for it is essential to their existence. It can regulate it when the interest of the public demands it, but not to such an extent as to render it ineffectual, or substantially impair the object of its incorporation. The constitution of this State in reserving the right to amend or repeal expressly provides that it may be exercised whenever, in the opinion of the legislature, the charter "may be injurious to the citizens of this State; in such manner, however, that no injustice shall be done to the corporators."

The court cited the law of Tennessee, providing for the redemption of coupons, scrip, etc., issued as evidence of indebtedness for labor, and said:

In Harbison *v.* Knoxville Iron Company, 103 Tenn. 421, 53 S. W. 955, 56 L. R. A. 316, 76 Am. St. Rep. 682, the supreme court of Tennessee held it to be a valid statute; the court saying, among other things: "The act before us is perhaps less stringent than any one considered in any of the cases mentioned. It is neither prohibitory nor penal, not special but general, tending towards equality between employer and employee in the matter of wages; intended and well calculated to promote peace and good order, and to prevent strife, violence, and bloodshed. Such being the character, purpose, and tendency of the act, we have no hesitation in holding that it is valid, both as general legislation, without reference to the State's reserved police power, and also as a wholesome regulation adopted in the proper exercise of that power." In the same case, on appeal, the Supreme Court of the United States held that the act does not conflict with the Constitution of the United States, citing St. Louis, Iron Mountain & Southern Railway Company *v.* Paul, cited above, to support its decision, Knoxville Iron Company *v.* Harbison, 183 U. S. 13, 22 Sup. Ct. 1, 46 L. Ed. 55.

The act under consideration has the same object as the Tennessee act and attempts to accomplish it by the same means, and upon principle and authority is a valid statute as to corporations.

RAILWAY RELIEF FUNDS—CONTRACTS LIMITING LIABILITY—EFFECT OF STATUTE—CONSTRUCTION OF CONTRACT—DISABILITY—*Sturgiss v. Atlantic Coast Line Railroad Company, Supreme Court of South Carolina, 60 Southeastern Reporter, page 939.*—J. R. Sturgiss was injured while in the employment of the railroad company and secured a judgment for damages in the amount of $2,700. After he had received this sum he sought to recover on a claim against the relief department of the railroad of which he was a member. A law of the State (act of March 7, 1905) requires the payment of the amount agreed upon in any contract with a relief department, and provides that the receipt of such benefit shall not operate to bar the right of the injured person or his representatives to sue for the recovery of

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legal damages. This law was declared unconstitutional in the circuit court of Charleston County, and the release made out by the plaintiff when he received the amount of the judgment awarded in the earlier action was held to be valid and binding as to any further claims.

On appeal the judgment of the lower court was affirmed as to any further claims being collectible, but this was on the ground that Sturgiss was bound by his release in the receipt, and the statute was held not to be applicable to the case in hand.

Sturgiss's injuries were not such as to disable him absolutely, but did not allow him to resume the duties which he was performing prior to his receiving the injuries. The meaning of the word "disability" came up for discussion, therefore, as it was used in the relief contract.

On the points involved, Judge Gary, speaking for the court, said:

The statute under consideration was enacted for the purpose of preventing railroad corporations (and other parties therein mentioned) from inaugurating schemes, the ultimate aim and practical effect of which are to enable the railroad company to bring such influence to bear upon its employees as will force them to surrender their claims for damages when they have sustained injury through the negligence of the company, against which it is not allowed by law to contract. When the regulations of the hospital and relief fund are analyzed, it will be seen that they contemplate the result just mentioned. Not only do they provide that the employee who has paid his assessments and thereby contributed to the creation and a maintenance of said fund shall be barred from recovering damages for negligence if he accepts the benefit thereunder, but they likewise provide that his representatives shall not be allowed to bring an action for damages caused by the negligence of the corporation, if they accept the benefit of said fund. Membership in the hospital and relief fund creates the relation of trustee and cestui que trust between the company and the employee, and, although the employee is assessed to maintain the fund, he is not allowed to receive a dollar of the money collected for that purpose, unless he surrenders his claim for damages when he has been injured through the negligence of the corporation. The fiduciary relation established between the company and the employee places him practically at the mercy of the corporation, for it is a well-known fact that the employees are not persons generally of large means, and frequently are dependent entirely upon their salary or wages for a support. Public policy demands that the corporation shall not have the opportunity of taking advantage of its employees through the fiduciary relations established between them with that end in view. We only desire to say in conclusion, that if the hospital and relief fund is successfully operated, the practical result will be that the railroad company will be enabled to liquidate claims for damages arising out of its negligence with sums of money contributed, in the main, by its employees—an indirect way of contracting against its negligence. We do not think, however, that the question as to the constitutionality of the statute is controlling in this case; but as it fairly arises upon the record, was also made the paramount issue in the circuit court, and is of vital importance, we have followed the practice in other cases, and have considered it. It is true the statute

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provides that the acceptance of benefits under the hospital fund shall not operate to estop or in any manner bar the right of the employee from recovering damages for injury caused by the negligence of the corporation; but it does not provide that a receipt or release given in satisfaction of a claim arising out of negligence shall be null and void, and that even after full compensation for negligent injury the employee shall still have the right to recover his beneficial interest in the hospital fund, although he had previously relinquished it. The statute is therefore inapplicable to this case.

We proceed to consider the question whether the disability mentioned in the contract has reference to the work at which the plaintiff was engaged when he was injured. The conclusion just announced, however, renders the question speculative. In rule 45 of the "regulations of the relief department" is the following provision: "Whenever used in these regulations the word 'disability' shall be held to mean physical inability to work, by reason of sickness, or accidental injury, and the word 'disabled' shall apply to members thus physically unable to work." This provision has reference to physical inability to work whether caused by sickness or accidental injury. There is scarcely a conceivable case where a person sustaining accidental injury is not able to do some kind of work, even when deprived of both arms or both legs. If the construction of the said provision by his honor, the presiding judge, is correct, then a person accidentally losing both arms or both legs would not be entitled to the benefit of the fund the moment he was able to do any kind of work. He would not even be entitled to any part of the fund whatever, if he could do work of any kind. We can not accept a construction that would bring about such injustice.

Further, on this point, Judge Jones said:

With respect to the second question presented, I agree with Justice Gary that the circuit court was incorrect in construing the term "physical inability to work" to mean "physical inability to perform any labor." The language must not be construed as if isolated from the context, but must be construed in the light of the circumstances and the regulations of the relief department. Under regulation 45 the decision as to when members are disabled and when they are able to work rests with the medical officers of the department, and under regulation 54, if a member reported by the medical examiner as able to work is not able to work on the day set, he must so report to the medical examiner, otherwise he shall not be considered disabled on or after the day set for his return to work. Under regulation 57 the time of disability from sickness or injury begins on the day after the last wage day, and, under regulation 45, ends when the medical officers decide that the member is able to work. The relief department contract grows out of the fact that the employed member is under a contract of service with the employing member of the relief department, and the dues and benefits are apportioned according to classes based upon the wages of employed members. Hence the words "physical inability to work" must mean physical inability to resume work within the scope of the original service or employment.

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DECISIONS UNDER COMMON LAW.

INJUNCTION—RIGHT TO STRIKE—VIOLATION OF TRADE AGREEMENT—ACTS OF OFFICERS OF TRADE UNIONS—*Delaware, Lackawanna and Western Railroad Company v. Switchmen's Union of North America et al., United States Circuit Court, Western District of New York, 158 Federal Reporter, page 541.*—This was a motion to continue an injunction that had been issued against the Switchmen's Union of North America, F. T. Hawley, its president; Buffalo Lodge No. 4, of said union, William Jordan, its president, and other individuals, to prevent an alleged interference with and obstruction of the business of the railroad company. A contract was offered in evidence by which the members of the union agreed to continue in the employment of the company until a day set, the contract being subject to rescission thereafter on thirty days' notice by either party.

The complainant company alleged that the defendants had conspired to induce a strike and to compel or induce by intimidation the violation of the contract above mentioned. The court refused to continue the injunction on the facts shown, which, together with the points of law involved, are set forth in the following extracts from the opinion of the court, which was delivered by Judge Hazel:

The basis for the exercise of the injunctive powers of the court must be the actual or threatened interference with the property rights of the complainant, and to invoke such powers, which imply the punishment for an infraction of the order of the court, the unlawful interference or threatened interference must be satisfactorily shown. The specific allegations of the bill alleging interference and unlawful inducement to strike or cease work is that the defendants, under the direction of said Hawley, the president of the Switchmen's Union, caused a poll of the switchmen in the employ of the complainant to be taken declaratory of a strike or no strike, and, the poll having been in favor of a strike, that the said Hawley intends to conduct the same pursuant to the constitution and by-laws of the defendant Switchmen's Union and its subordinate lodge Buffalo Lodge No. 4. The bill and affidavits of complainant reveal an absence of sufficient facts by which the court may perceive that there was or is threatened any unlawful interference with complainant's property rights by way of inducement, enticement, threats, or intimidation to cause such threatened strike. That workmen may strike or quit their employment ad libitum is well recognized by all the authorities, and that they may do so singly or in concert, even though it be in violation of their service contract, has also been held. In Hopkins *v.* Oxley Stave Co., 83 Fed. 912, 28 C. C. A. 99, the principle is thus stated:

"The courts have invariably upheld the right of individuals to form labor organizations for the protection of the interests of the laboring classes, and have denied the power to enjoin the members of such associations from withdrawing peaceably from any service, either singly or in a body, even where such withdrawal involves a breach of contract."

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And in Arthur *v.* Oakes, 63 Fed. 310, 11 C. C. A. 209, an earlier case, Mr. Justice Harlan, sitting in the circuit court of appeals for the seventh circuit, and writing the opinion of the court, says:

"Those employees having taken service, first with the company, and afterwards with the receivers, under a general contract of employment, which did not limit the exercise of the right to quit the service, their peaceable cooperation as the result of friendly argument, persuasion, or conference among themselves, in asserting the right of each and all to refuse further service under a schedule of reduced wages, would not have been illegal and criminal, although they may have so acted in the firm belief and expectation that a simultaneous quitting without notice would temporarily inconvenience the receivers and the public."

The court broadly held that the employees in good faith and peaceably had the right to leave the service of their employer, but without injuring or interfering with the free action of others. It follows, therefore, whenever a conspiracy is alleged that it must be shown that the intention of the conspirators was to inflict wrong upon the complainant, and if the defendants herein acting together tried to have the employees break their contract, or urged them to leave the employ of the complainant, the court has power to interfere. But if it appear that the workmen upon their individual responsibility desire to breach the contract, and quit their employment because of alleged grievances or any other reason, a court of equity will not interfere. Such being the law, how stands this case?

The only justification for the preliminary injunction is the allegation that the defendants incited or coerced the members of the union employed by complainant to violate their contract and incited them to stop work in a body. The rule is conceded by counsel for complainant that the switchmen can strike singly or collectively as the result of their individual action, though such action may have been induced by cooperation and lawful persuasion. The law does not prohibit workmen from holding conferences, and discussing their grievances with the object and purpose of striking or ceasing work at a preconcerted time, and it is only when such action by employees is accompanied by acts of violence, threats, undue persuasion, or intimidation, or such wrongful method as will irreparably injure the aggrieved party that resort may be had to a court of equity for redress. The workmen are not forbidden by law from seeking, taking, or following the advice of the officers of their union or labor organization. As bearing upon this point, the case of Thomas *v.* Cincinnati, N. O. & T. P. Ry. Co. (C. C.), 62 Fed. 803, is instructive. In that case Judge Taft, at page 817 of 62 Fed., enunciated the doctrine that the employees have labor to sell, and accordingly have the right to accumulate a fund for the support of those who engage in a legal strike. He says:

"They have the right to appoint officers who shall advise them as to the course to be taken by them in their relations with their employers. They may unite with other unions. The officers they appoint, or any other person to whom they may choose to listen, may advise them as to the proper course to be taken by them in regard to their employment, or, if they choose to repose such authority in any one, may order them, on pain of expulsion from their union, peaceably to leave the employ of their employer because any the terms of the employment are unsatisfactory."

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According to the constitution and by-laws of the defendant Switchmen's Union and of the subordinate lodge no strike can be declared on any system unless two-thirds of the members on such system shall first have voted for the same and then it shall be conducted by the international president. Members of the union are not permitted to engage in a strike or encourage any other member to engage in one without the consent of two-thirds of the members employed on that system and that of the international president. The affidavits read on this motion disclose that the poll of the members has already been taken in favor of a strike, and that the sanction of the defendant Hawley is required to effectuate the same. Is the consent of the president in connection with the asserted direction by him to take the poll such an incitement or inducement to strike as to justify a continuance of the injunction? I think not, for, as already mentioned, a peaceable strike is not per se illegal, and the defendant Hawley acting under the constitution and by-laws of the union could at the request of the members advise the employees as to their proper and lawful action. (Wabash R. Co. *v.* Hannahan (C. C.), 121 Fed. 563.) Under the by-laws of the union his consent to strike must follow the poll to strike, and, seemingly, is necessary before the striking members can require its officers to levy assessments upon the members to pay the expenses and benefits provided for. Reference was made by complainant to a printed circular letter purporting to have been issued by the Switchmen's Union and mailed to switchmen throughout the United States soliciting membership in said union and practically inciting a strike. Such circular, however, is not entitled to probative weight, its origin and authorship not being proven, and it appearing to have been promptly and seasonably repudiated by the union. In the absence, therefore, of satisfactory evidence that the defendants have unlawfully combined and conspired to induce, incite, or intimidate the members of the said union to strike and maliciously interfere with the carrying out of the contract between the complainant and its employees, I am not inclined to continue the restraining order.

In the case at bar, it may be conceded that the defendants have influence over the switchmen employed on complainant's road, yet that such influence has been improperly exercised in view of the rule of law permitting employees to strike even though they have entered into a service contract is not clear. If I were satisfied that the men were unlawfully instigated, incited, or urged by the defendants to sever their service contract of employment, which is claimed to remain in force until January 1, 1908, or thereafter until either party gives thirty days' notice of a desired revision, I would not hesitate to grant the injunction. But even assuming that the poll of the employees was directed by the defendants, as claimed in the bill, it can not be held as a matter of law, in the absence of satisfactory proof of a combination or conspiracy to break a valid contract, that such acts on their part, standing alone, presume unlawful incitement, persuasion, or coercion of the members of the union, to engage in an illegal strike.

It is further claimed by the complainant that the correspondence in evidence passing between it and various officers of the union, on the subject of a conference to discuss the grievance of the switchmen and the request for increased wages, should be considered as showing that the defendants initiated the alleged dissatisfaction among the employees with a wrongful intention to injure the complainant in its business. But upon this point I am inclined to think that the

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defendants had the right to select a committee to request a conference and to represent them, and, moreover, they could, if they chose to do so, delegate an officer of the Switchmen's Union to represent them and to advocate an adjustment of their grievances and difficulties, with a view of effectuating an amicable arrangement.

LABOR ORGANIZATIONS—COLLECTION OF FINES—CONSPIRACY—*Burke v. Fay, St. Louis Court of Appeals, 107 Southwestern Reporter, page 408.*—William Burke was a plumbing contractor in the city of St. Louis. In 1905 he had in his employment members of the plumbers' union of that city, and in consequence of an alleged violation of his contract with the union the men quit work until a payment of $200 should be made to the plumbers' and the gas fitters' unions jointly. After some delay this was done, and Burke afterward sued to recover the payment, in the St. Louis circuit court. On this trial the judge gave a peremptory instruction to the jury to find for the defendants, and refused a new trial, whereupon Burke appealed, and secured a reversal of the judgment with orders for a new trial.

Prior to July, 1900, there had been a controversy between plaintiff and the gas fitters' union in regard to a gas-fitting contract, which plaintiff had sublet, and upon which the gas fitters' union refused to allow members of the union to work. This difficulty was settled by plaintiff signing the following agreement: "St. Louis, July 10, 1900. Agreement between William Burke and Gas Fitters' Union of St. Louis. I promise and agree to employ members of the St. Louis Gas Fitters' Union to do all gas fitting, both new work and jobbing, that I may have or contract for on this day. I further agree to figure on gas fitting on all buildings on which I figure on the plumbing work, and it is further agreed that I will do all in my power to further the aims and constitution of said gas fitters' union. [Signed] William Burke." The plumbers' and the gas fitters' unions afterward became suspicious that plaintiff was not living up to his agreement on contracts he had in Memphis, Tenn., and in Allentown, and directed defendants to make an investigation, which they did, making one trip to Memphis and two trips to Allentown. The two unions, through defendants as their agents, demanded $200 of plaintiff. Dalton, the business agent of the plumbers' union, testified that this demand was to reimburse the unions for expenses incurred by himself and Fay (the agent for the gas fitters' union) on their trips to Memphis and Allentown. Plaintiff had no gas fitters in his employ, and testified he did not take gas-fitting contracts. He also testified that Dalton told him the gas fitters and the plumbers had decided to work together, and, if he did not pay the $200, his plumbers would be called off on all the jobs he had, both in and outside the city of St. Louis; that at first he refused to pay the $200, and his men were called off on all the jobs he had and his work stopped, and he had to pay the $200 to get the men to go back to work.

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The opinion of the court was delivered by Judge Bland, who recited the facts and quoted from Eddy on Combinations, (vol. 1, sec. 480), as follows:

Any combination, no matter how lawful its origin nor how praiseworthy its objects, which turns aside for the moment from its legitimate pursuits and agrees upon a course of conduct for the sole purpose of inflicting injury upon a third party, becomes at that instant a civil conspiracy, and all damages sustained may be recovered."

The cases of Carew *v.* Rutherford (106 Mass. 1, 8 Am. Rep. 287) and March *v.* Bricklayers, etc., Union (79 Conn. 7, 63 Atl. 291, Bulletin No. 67, p. 884), were then cited as supporting the view that money obtained by coercion under circumstances similar to the case in hand was recoverable, and the opinion concluded:

If the $200 was assessed by the two unions as a fine against plaintiff, or if it was demanded for the purpose of reimbursing the unions for making an investigation of plaintiff's contracts, then, according to the above authorities, the unions stepped aside for the moment from their legitimate pursuits for the sole purpose of inflicting injury upon plaintiff, and were guilty of a civil conspiracy; and, if plaintiff was coerced to pay the $200 in order to continue his business, he is entitled to recover the damages resulting from the unlawful act, and may recover of any one and from two or more of the persons who confederated together to injure him. (1 Eddy on Combinations, sec. 468.) But there is no evidence in the record showing, or tending to show, that plaintiff was compelled to pay the $200, or abandon the performance of his contracts. From aught that appears from the evidence he might have employed other plumbers to do his work. Those in his employ had the right to quit work at any time and for any cause, or without cause, and plaintiff is not entitled to recover merely because they did quit on the call of their unions. He was not damaged, unless the $200 was coerced from him, and he was not coerced, if he could have employed other plumbers to do his work. He made no effort to employ others, but submitted to the demand of the unions and paid the $200, rather than be put to the inconvenience and delay of hiring other workmen, and herein is his case to be distinguished from the case of Carew *v.* Rutherford and March *v.* Bricklayers' & Plasterers' Union, supra, in both of which the plaintiffs were compelled to comply with the demands made upon them by the unions in order to carry out their contracts and prevent serious loss. I do not think there is any substantial evidence that the $200 was paid under duress, and that it should be held the payment was voluntary, but my associates are of a different opinion, and think there was sufficient evidence to send that issue to the jury. Wherefore the judgment is reversed, and the cause remanded.

LABOR ORGANIZATIONS—ENFORCEMENT OF RULES—STRIKES—INJUNCTION—PARTIES—OPEN SHOP—*Reynolds v. Davis, Supreme Judicial Court of Massachusetts, 84 Northeastern Reporter, page 457.*—Edward T. Reynolds and others, employers, had procured an injunc-

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tion against Geo. H. E. Davis and others to forbid the carrying out of strikes. The injunction was modified on appeal and conditionally affirmed, Judge Knowlton dissenting as to some of the grounds of the conclusion, though concurring in the general result. The matter had been referred to a master, whose findings were before the court, according to which the facts were as follows: Nine firms and 35 individuals brought a bill against a building trades' council, 6 locals, and 28 individuals. At a time not stated the employers, with three exceptions, had issued an advertisement announcing their purpose "to do a free and unrestricted business" under open-shop rules. These rules were announced and on May 1, 1906, were posted in the shops of the employers, whereupon a number of members of the unions left their work, others remaining until a nonunion man was put on the job with them, when they also withdrew.

On the points involved Judge Loring, who spoke for the court, said:

Without going into details it is manifest that the strike here in question was a strike against the open shop, as the plaintiffs proposed to carry on an open shop, and for the closed shop as it had previously been carried on by many of the plaintiffs and by the defendants.

It is settled in this Commonwealth that the legality of a combination not to work for an employer, that is to say, of a strike, depends (in case the strikers are not under contract to work for him) upon the purpose for which the combination is formed—the purpose for which the employees strike.

The occasion of the strike was the posting of the open-shop rules. The strike was manifestly a strike against working under those rules. To understand the significance of the defendants' combination not to work under these open-shop rules it is necessary to state what was proved to have been the condition under which many of the plaintiffs had been conducting their business before these rules were posted.

They had as a rule been conducting their business under a verbal understanding, if not an actual agreement, with the defendant local unions.

It appears that the defendant local unions were affiliated with the Building Trades Council of Lynn and Vicinity, also named as a party defendant. The Building Trades Council of Lynn and Vicinity appears to be an unincorporated association made up of delegates from the local unions with which it is "affiliated," including the six local unions named here as defendants.

By the working and trade rules of this council every grievance which a member of a local union affiliated with the council has against his employer is to be investigated by the executive board of the council, and if the employer does not comply with the decision of the executive board he is reported to the council as "unfair," and upon being declared "unfair" by the council the executive board is "to again interview" the employer, and if the employer continues in his refusal to comply with the demands of the council the board "shall at once remove all union men" from his employ, and "no union man shall be allowed to go to work" for him until he is "again placed upon the fair list by the council."

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The strike in question was a combination for the purpose of making the trades council, composed of delegates from the unions of which the individual defendants are members, the arbiter of all questions between individual employees and their employers.

It purports to include questions arising under contracts still in existence between the two. To force the employer to submit to a delegate body of employees his rights under an existing contract by a combination for that purpose is not a justifiable interference with their employer's business.

And in cases arising outside existing contracts it is an attempt to force compliance on the part of employers with the decision of this delegate body of employees as to whether a single employee is or is not to work for the employer, which decision is to be enforced by a strike. Such a strike would be a strike in the nature of a sympathetic strike, that is to say, it is a strike not to forward the common interests of the strikers but to forward the interests of an individual employee in respect to a grievance between him and his employer where no contract of employment exists.

We do not mean to say that a labor union can not combine to support a committee to take up individual grievances in behalf of the several members. What we now decide to be illegal is a combination that such grievances (that is to say, grievances between an individual member of a union and his employer which are not common to the union members as a class) shall be decided by the employees and that decision enforced by a strike on the part of all. In this respect this case comes within the principle upon which the second point in Pickett *v.* Walsh, 192 Mass., 572, 78 N. E., 753 [Bulletin No. 70, p. 74], was decided.

It follows that the plaintiffs were entitled to an injunction restraining the defendants from combining together to further the strike in question, and from doing any acts whatever, peaceful or otherwise, in furtherance thereof, including the payment of strike benefits and putting the plaintiffs on an unfair list.

The Building Trades Council and the six unions were not properly joined as parties defendant as unincorporated associations (Pickett *v.* Walsh [supra]), and they should be stricken from the title of the cause. The pleader seems to have thought that the reason why all the members of these unincorporated associations need not be joined as defendants is because their names "are to your complainants unknown," and he has undertaken to make them parties by an allegation "that John Doe and Richard Roe and sundry other persons whose names and whose several residences or places of business are to your complainants unknown, are the remaining members of said respondent unions and the respondent Building Trades Council, and are participants in the unlawful acts hereinafter set forth." The rule of equity pleading which dispenses with the joinder of all members of an unincorporated association depends upon their being members of a class who have a common interest and are too numerous to be made individually parties defendant even if their names are known to the plaintiff. The proper way of bringing them before the court is to join as parties defendant persons who are alleged to be and are proper representatives of the class, describing the class to which the members belong.

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LAWS OF VARIOUS STATES RELATING TO LABOR, ENACTED SINCE JANUARY 1, 1904.

[The Tenth Special Report of this Bureau contains all laws of the various States and Territories and of the United States relating to labor, in force January 1, 1904. Later enactments are reproduced in successive issues of the Bulletin, beginning with Bulletin No. 57, the issue of March, 1905. A cumulative index of these later enactments is to be found on page 417 et seq. of this issue.]

DISTRICT OF COLUMBIA.

ACTS OF FIRST SESSION, SIXTIETH CONGRESS, 1907-8.

CHAPTER 198.—*Leave of absence for per diem employees—Labor Day.*

SECTION 6. All per diem employees and other day laborers of the District of Columbia who have been continuously employed for five working days next preceding the first Monday of September in each year (commonly called Labor Day), and whose employment continues through and beyond said day, may, in the discretion of the commissioners of the District of Columbia, be granted leave of absence with pay for said day.

Approved, May 26, 1908.

CHAPTER 209.—*Employment of children—General provisions.*

SECTION 1. No child under fourteen years of age shall be employed or permitted to work in the District of Columbia in any factory, workshop, mercantile establishment, store, business office, telegraph or telephone office, restaurant, hotel, apartment house, club, theater, bowling alley, laundry, bootblack stand, or in the distribution or transmission of merchandise or messages. No such child shall be employed in any work performed for wages or other compensation, to whomsoever payable, during the hours when the public schools of the District of Columbia are in session, nor before the hour of six o'clock in the morning or after the hour of seven o'clock in the evening: *Provided*, That the provisions of this section shall not apply to children employed in the service of the Senate: *And provided further*, That the judge of the juvenile court of said District may, upon the application of the parent, guardian, or next friend of said child, issue a permit for the employment of any child between the ages of twelve and fourteen years at any occupation or employment not in his judgment dangerous or injurious to the health or morals of such child, upon evidence satisfactory to him that the labor of such child is necessary for its support, or for the assistance of a disabled, ill, or invalid father or mother, or for the support in whole or in part of a younger brother or sister or a widowed mother. Such permits shall be issued for a definite time, but they shall be revocable at the discretion of the judge by whom they are issued or by his successor in office. Hearings for granting and revoking permits shall be held upon such notice and under such rules and regulations as the judge of said court shall prescribe.

SEC. 2. No child under sixteen years of age shall be employed or permitted to work in the District of Columbia in any of the establishments named in section one, unless the person or corporation employing him procures and keeps on file and accessible to the inspectors authorized by this act and the truant officers of the District of Columbia an age and schooling certificate, and keeps two complete lists of all such children employed therein, one on file and one conspicuously posted near the principal entrance of the building in which such children are employed.

SEC. 3. An age and schooling certificate shall be approved only by the superintendent of public schools, or by a person authorized by him in writing, who shall have authority to administer the oath provided for therein, but no fee shall be charged therefor.

SEC. 4. No age and schooling certificate shall be approved unless satisfactory evidence is furnished by duly attested transcript of the certificate of birth or baptism of

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such child, or other religious record, or the register of birth or the affidavit of the parent or guardian or custodian of a child, which affidavit shall be required, however, only in case such last-mentioned transcript of the certificate of birth be not procured and filed, showing the place and date of birth of such child, which affidavit must be taken before the officer issuing the employment certificate, who is hereby authorized and required to administer such oath, and who shall not demand or receive a fee therefor.

SEC. 5. The age and schooling certificate of a child under sixteen years of age shall be in the following form:

AGE AND SCHOOLING CERTIFICATE.

This certifies that I am the (father, mother, guardian, or custodian) of (name of child) ——— ———, and that (he or she) was born at (name of town or city) ——— in the county (name of county, if known) ——— and State (or country) ——— on the (day and year of birth) ——— and is now (number of years and months) ——— old.

Signature of (father, mother, guardian, or custodian).

(Date.)

There personally appeared before me the above-named (name of person signing) ——— ——— and made oath that the foregoing certificate by (him or her) signed is true to the best of (his or her) knowledge and belief. I hereby approve the foregoing certificate of (name of child) ——— ———; complexion (fair or dark), ———; hair (color), ——— having no sufficient reason to doubt that (he or she) is of the age therein certified, I hereby certify that (he or she) can read at sight and can write legibly simple sentences in the English language, and that (he or she) has reached the normal development of a child of (his or her) age, and is in sound health and is physically able to perform the work which (he or she) intends to do, and that (he or she) has regularly attended the public schools, or a school equivalent thereto, for not less than one hundred and thirty days during the school year previous to applying for such school record, or during the year previous to applying for such school record, and has received during such period instruction in reading, spelling, writing, and arithmetic.

This certificate belongs to (name of child in whose behalf it is drawn) ——— ——— and is to be surrendered to (him or her) whenever (he or she) leaves the service of the corporation or employer holding the same, but if not claimed by said child within thirty days from such time it shall be returned to the superintendent of schools.

(Signature of person authorized to approve and sign, with official character of authority.)

(Date.)

A duplicate of each age and schooling certificate shall be filled out and kept on file by the superintendent of public schools. Any explanatory matter may be printed with such certificate, in the discretion of said superintendent: *Provided*, That in exceptional cases the judge of the juvenile court, upon the recommendation of the superintendent of public schools, or the person authorized to act for him, may, in writing, waive the necessity of the schooling certificate provided for in this act, and in such cases the age certificate shall entitle the holder to be employed without a violation of this act.

SEC. 6. Whoever employs a child or permits a child to be employed in violation of sections one, two, eight, or nine of this act shall be deemed guilty of a misdemeanor and, for such offense, be fined not more than fifty dollars; and whoever continues to employ any child in violation of any of said sections of this act, after being notified by an inspector authorized by this act, or a truant officer of the District of Columbia, shall for every day thereafter that such employment continues be fined not more than twenty dollars. A failure to produce to an inspector authorized by this act, or a truant officer of the District of Columbia, any age or schooling certificate or list required by this act shall be prima facie evidence of illegal employment of any person whose age and schooling certificate is not produced or whose name is not listed. Any corporation or employer retaining any age and schooling certificate in violation of section five of this act shall be fined not more than twenty dollars. Every person authorized to sign the certificate prescribed by section five of this act who knowingly certifies to any materially false statement therein shall be fined not more than fifty dollars.

SEC. 7. The inspectors authorized by this act and the truant officers of the District of Columbia shall visit the establishments named in section one and ascertain whether any minors are employed therein contrary to the provisions of this act, and they shall report any cases of such illegal employment to the superintendent of public schools and the corporation counsel of the District of Columbia. The inspectors authorized by this act and the truant officers of the District of Columbia shall require that the age

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and schooling certificates and lists provided for in this act of minors employed in the establishments named in section one shall be produced for their inspection.

SEC. 8. No minor under sixteen years of age shall be employed, permitted, or suffered to work in any of the establishments named in section one more than eight hours in any one day, or before the hour of six o'clock antemeridian, or after the hour of seven o'clock postmeridian, and in no case shall the number of hours exceed forty-eight in a week.

SEC. 9. Every employer shall post in a conspicuous place in every room where such persons are employed a printed notice, stating the number of hours required of them on each day of the week, the hours of commencing and stopping work, and the hours when the time or times allowed for dinner or for other meals begin and end. The printed form of such notice shall be furnished by the inspectors authorized by this act and the truant officers of the District of Columbia, and the employment of any such person for a longer time in any day than that so stated shall be deemed a violation of this section.

SEC. 10. The Commissioners of the District of Columbia are hereby authorized to appoint two inspectors to carry out the purposes of this act, at a compensation not exceeding one thousand two hundred dollars each per annum.

SEC. 11. No male child under ten, and no girl under sixteen years of age shall exercise the trade of bootblacking, or sell or expose or offer for sale any newspapers, magazines, periodicals, or goods, wares, or merchandise of any description whatsoever, upon the streets, roads, or highways, or in any public place within the District of Columbia.

SEC. 12. From and after July first, nineteen hundred and eight, no male child under sixteen years shall exercise the trade of bootblacking or sell or expose or offer for sale any newspapers, magazines, periodicals or goods, ware or merchandise of any description whatsoever upon the streets, roads, or highways, or in any public place within the District of Columbia unless a permit and badge as hereinafter provided shall have been issued to him by the superintendent of public schools of the District of Columbia, or by a person authorized by him in writing for that purpose upon the application of the parent, guardian, or other person having the custody of the child desiring such a permit and badge, or in case said child has no parent, guardian, or custodian, then on the application of his next friend, being an adult.

SEC. 13. Such permit and badge shall be issued free of charge to the applicant, but shall not be issued until an age and schooling certificate shall have been issued as provided in this act.

SEC. 14. Such permit shall state the date and place of birth of the child, the name and address of its parent, guardian, custodian, or next friend, as the case may be, and describe the color of hair and eyes, the height and weight, and any distinguishing facial mark of such child, and shall further state that the age and schooling certificate has been duly examined and filed, and that the child named in such permit has appeared before the officer issuing the permit. The badge furnished by the officer issuing the permit shall bear on its face a number corresponding to the number of the permit and the name of the child. Every such permit, and every such badge on its reverse side, shall be signed in the presence of the officer issuing the same by the child in whose name it is issued. The badge provided for herein shall be worn conspicuously at all times by such child while so working, and all such permits and badges shall expire annually on the first day of January. The color of the badge shall be changed each year. No child to whom such permit and badge are issued shall transfer the same to any other person, nor be engaged in the District of Columbia in any of the trades or occupations mentioned in this section [Sec. 12] without having conspicuously upon his person such badge, and he shall exhibit the same upon demand to any police or truant officer or to the inspectors in this act provided for.

SEC. 15. No child to whom a permit and badge are issued as provided for in the preceding sections shall sell or expose or offer for sale any newspapers, magazines, or periodicals or goods, wares, or merchandise of any description whatever after ten o'clock in the evening or before six o'clock in the morning.

SEC. 16. Nothing in this act contained shall apply to the employment of any child in a theatrical exhibition, provided the written consent of one of the commissioners of the District of Columbia is first obtained. Such consent shall specify the name of the child, its age, the names and residence of its parents or guardians, together with the place and character of the exhibition.

SEC. 17. The juvenile court of the District of Columbia is hereby given jurisdiction in all cases arising under this act.

Approved, May 28, 1908.

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NEW JERSEY.

ACTS OF 1907.

CHAPTER 17.—*Inspection of bakeries.*

[See Bulletin No. 73, p. 912.]

CHAPTER 197.—*Accidents on railroads.*

SECTION 7. Every railroad shall, whenever an accident, attended with or without loss of human life, occurs within this State upon its line of railroad, or upon the depot grounds or yards, give immediate notice thereof to said board [of railroad commissioners]. In the event of any such accident the said board, if it be deemed the public interests require it, shall cause an investigation to be made forthwith, which investigation shall be held in the locality of the accident, unless for the greater convenience for those concerned it shall order such investigation to be held at some other place, and said investigation may be adjourned from place to place, as may be found necessary and convenient. The said board shall notify an officer or station agent of said railroad of the time and place of the investigation at least five days before such investigation shall take place. The cost of such investigation shall be ascertained by the chairman of the said board, and the said cost shall be paid out of the funds appropriated to said board.

Approved May 15, 1907.

CHAPTER 229.—*Employment of children—General provisions.*

[See Bulletin No. 73, pp. 753, 754.]

CHAPTER 230.—*Employment offices.*

SECTION 1. The term person, when used in this act, means and includes any individual, company, association or corporation, or their agents, and the term employment agency means and includes the business of procuring or offering to procure help or employment or of giving information as to where help or employment may be procured, whether such business is conducted in a building or on the street or elsewhere; and the business of keeping an intelligence office, employment bureau, theatrical, or shipping agency, nurses' registry, or agency for procuring engagements for vaudeville or theatrical performers, or other agency or office for procuring work or employment for persons seeking employment where a fee or privilege or commission is exacted, charged or received directly or indirectly for procuring or assisting or promising to procure employment, work, engagement or a situation of any kind, or for procuring or providing help or promising to provide help for any person, whether such fee is collected from the applicant for employment or the applicant for help, excepting agencies conducted exclusively for procuring employment for persons as teachers, and in recognized educational institutions only, as occupants of technical or executive positions, and registries of all incorporated associations of registered nurses and bureaus conducted by registered medical institutions, and excepting also departments maintained by persons, firms, corporations or associations for the purpose of securing help for themselves where no fee is charged the applicant for employment. The term fee, as used in this act, means money or a promise to pay money. The term fee also means and includes the excess of money received by any such licensed person over what he has paid for transportation, transfer of baggage or lodging for any applicant for employment. The term fee, as used in this act, also means and includes the difference between the amount of money received by any person who furnishes employees or performers for any entertainment, exhibition or performance and the amount paid by said person to the employees or performers whom he hires to give such entertainment, exhibition or performance. The term privilege, as used in this act, means and includes the furnishing of food, supplies, tools or shelter to contract laborers, commonly known as commissary privileges.

SEC. 2. No person shall open, keep or carry on any such employment agency unless every such person shall procure a license therefor from the mayor or the head officer [of the municipality] in which such person intends to conduct such agency. Such license shall be posted in a conspicuous place in said agency. Any person who shall open or conduct such an employment agency without first procuring said license shall be guilty of a misdemeanor, and shall be punishable by a fine of not less than fifty dollars and not more than two hundred and fifty dollars, or by imprisonment

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for a period of not more than one year, or both, at the discretion of the court. Such license shall be granted upon the payment to the treasurer of such municipality, or other similar officer, of a fee of not exceeding twenty-five dollars annually for such employment agency, the amount of such fee to be fixed by said mayor or other head officer, one-half of which license fee shall go to and be paid to the chief of police or to the license inspector if one be appointed. Every license shall contain the name of the person licensed, a designation of the city, street and number of the house in which the person licensed is authorized to carry on the said employment agency, and the number and date of such license. Such license shall not be valid to protect any other than the person to whom it is issued, or any place other than that designated in the license, and shall not be transferred or assigned to any other person unless consent is obtained from the mayor or other head officer. No such agency shall be located in rooms used for living purposes or where boarders or lodgers are kept or where meals are served or where persons sleep or in connection with a building or on premises where intoxicating liquors are sold to be consumed on the premises, excepting cafés and restaurants in office buildings. If said licensed person shall conduct a lodging house for the unemployed, separate and apart from such agency, it shall be so designated in the license. The application for such license shall be filed not less than one week prior to the granting of said license, and the mayor or other head officer shall act upon such application within thirty days from the time of such application. Every such applicant shall be required to furnish satisfactory proof, by affidavits, of good, moral character, and any person may protest against the issuance or the transfer of any license. The names and addresses of all applicants for licenses or for transfers of licenses shall be posted daily in the office of the clerk of said municipality. The license shall run to the first day of January next ensuing the date thereof, and no longer, unless sooner revoked by the mayor or other head officer granting the same.

SEC. 3. It shall be the duty of every such licensed person, except those conducting theatrical agencies, or agencies for the employment of vaudeville performers, or nurses' registries, or agencies for the procuring of technical, clerical, sales or executive positions for men only, to keep a register, approved by the mayor or other head officer, in which shall be entered, in the English language, the date of the application for employment; the name and address of the applicant to whom employment is promised or offered; the amount of the fee received, and, whenever possible, the names and addresses of former employers or persons to whom such applicant is known. Such licensed person, except those above specified in this section, shall also enter in a separate register, to be approved as aforesaid, in the English language, the name and address of every applicant accepted for help, the date of such application, kind of help requested, the names of the persons sent, with the designation of the one employed, the amount of the fee received and the rate of wages agreed upon. The aforesaid registers of applicants for employment and for help shall be open during office hours to inspection by the officers of said municipality. No such licensed person, his agent or employees, shall make any false entry in such registers. It shall be the duty of every licensed person, whenever possible, to communicate orally or in writing with at least one of the persons mentioned as references for every applicant for work in private families, or employed in a fiduciary capacity, and the result of such investigation shall be kept on file in such agency: *Provided*, That if the applicant for help voluntarily waives in writing such investigation of references by the licensed person, failure on the part of the licensed person to make such investigation shall not be deemed a violation of this act. Every licensed person exempted from the provisions of this section as to the keeping of registers shall keep accurate records, in the English language, of all persons to whom work is promised or offered, or from whom a fee is taken, and of all persons from whom an application for an employee is accepted, together with the date of the engagement, the amount of the fee received and the rate of remuneration agreed upon.

SEC. 4. The fees charged applicants for employment as lumbermen, agricultural hands, coachmen, grooms, hostlers, seamstresses, cooks, waiters, waitresses, scrubwomen, laundresses, maids, nurses (except professional) and all domestics and servants, unskilled workers and general laborers, shall not in any case exceed ten per centum of the first month's wages, and for all other applicants for employment shall not exceed the amount of the first week's wages or salary, or five per centum of the first year's salary, except when the employment or engagement is of a temporary nature, not to exceed in any single contract one month, then the fee shall not exceed ten per centum of the salary paid. In case the applicant shall not accept or obtain help or employment, through such agency, then such licensed person shall on demand repay the full amount of the said fee, allowing three days' time to determine the fact of the applicant's failure to obtain help or employment. If an employee

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furnished fails to remain one week in the situation, a new employee shall be furnished to the applicant for help if he so elects, or three-fifths of the fee returned, within four days of demand: *Provided*, Said applicant for help notifies said licensed person within thirty days of the failure of the applicant to accept the position or of the applicant's discharge for cause. If the employee is discharged within one week without said employee's fault, another position shall be furnished or three-fifths of the fee returned to the applicant for employment, if he so elects. Failure of said applicant for help to notify said licensed person that such help has been obtained through means other than said agency shall entitle said licensed person to retain or collect three-fifths of the said fee. No such licensed person shall send out any applicant for employment without having obtained, either orally or in writing, a bona fide order therefor, and if it shall appear that no employment of the kind applied for existed at the place to which said applicant was directed, the said licensed person shall refund to such applicant, within three days of demand, any sums paid by said applicant for transportation in going to and returning from said place, and all fees paid by said applicant. It shall be the duty of such licensed person to give to every applicant for employment from whom a fee shall be received a receipt, in which shall be stated the name of said applicant, the date and amount of the fee, and the purpose for which it was paid, and to every applicant for help a receipt stating the name and address of said applicant, the date and amount of the fee, and the kind of help to be provided. Every such receipt, excepting only those given by theatrical, and those procuring technical, clerical, sales and executive positions for men only, shall have printed on the back thereof a copy of this section, in the English language, and in any language which the person to whom the receipt is issued can understand. No such licensed person shall receive or accept any valuable thing or gift as a fee or in lieu thereof. No such licensed person shall divide fees with contractors or their agents, or other employers, or anyone in their employ to whom applicants for employment are sent. Every such licensed person shall give to each applicant for employment a card or printed paper containing the name of the applicant, name and address of such employment agency, and the written name and address of the person to whom the applicant is sent for employment. Every such licensed person shall post in a conspicuous place in each room of such agency sections four, five and six of this act, which shall be printed in large type, in languages which persons commonly doing business with such office can understand. Such printed law shall also contain the name and address of the officer charged with the enforcement of this law.

SEC. 5. No such person shall induce or attempt to induce any domestic employee to leave his employment with a view to obtaining other employment through such agency. Whenever such licensed person, or any other acting for him, agrees to send one or more persons to work as contract laborers in any one place outside the city in which such agency is located, the said licensed person shall file with the mayor or commissioner of licenses, within five days after the contract is made, a statement containing the following items: Name and address of the employee; nature of the work to be performed, hours of labor; wages offered, destination of the persons employed and terms of transportation. A duplicate copy of this statement shall be given to the applicant for employment in a language which he is able to understand.

SEC. 6. No such licensed person shall send or cause to be sent any female as a servant or inmate or performed [performer] to enter any place of bad repute, house of ill-fame or assignation house, or to any house or place of amusement kept for immoral purposes, or place resorted to for the purposes of prostitution, or gambling house, the character of which such licensed person could have ascertained upon reasonable inquiry. No such licensed person shall knowingly permit any person of bad character, prostitutes, gamblers, intoxicated persons or procurers to frequent such agency. No such licensed person shall accept any application for employment made by or on behalf of any child under the age of fourteen years, or shall place or assist in placing any such child in any employment whatever. No licensed person, his agents, servants or employees, shall induce or compel any person to enter such agency for any purpose, by the use of force or by taking forcible possession of said person's property. No such licensed person, his or her agents or employees, shall have sexual intercourse with any applicant for employment. No such person shall procure or offer to procure help or employment in rooms or on premises where intoxicating liquors are sold to be consumed on the premises, whether or not dues or a fee or privilege is exacted, charged or received directly or indirectly. For the violation of any of the foregoing provisions of this section the penalty shall be a fine of not less than fifty dollars and not more than two hundred and fifty dollars, or imprisonment for a period of not more than one year, or both, at the discretion of the court. No such licensed person shall publish or cause to be published any false or fraudulent or misleading notice or advertisement; all advertisements of such employment agency

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by means of cards, circulars or signs and in newspapers and other publications, and all letter heads, receipts and blanks shall contain the name and address of such employment agency, and no such licensed person shall give any false information, or make any false promise or false representation concerning employment to any applicant who shall register for employment or help.

SEC. 7. The enforcement of this act shall be intrusted to the police departments of all municipalities not having license inspectors and to the license inspector or inspectors in other municipalities. The chief of police or such license inspector as may be appointed by the chief of police, which inspector shall have no other duties except under this act, shall make, at least, bimonthly visits to every such agency excepting those agencies exempted from keeping the prescribed registers under section four of this act, which shall be inspected on complaint made to said licensed inspector. Said inspectors shall have a suitable badge which they shall exhibit on demand of any person with whom they may have official business. Said inspectors shall see that all the provisions of this act are complied with, and shall have no other occupation or business. Complaints against any such licensed person shall be made in writing to any police magistrate or justice of the peace and reasonable notice thereof, not less than one day, shall be given in writing to said licensed person by serving upon him a concise statement of the facts constituting the complaint, and a hearing shall be had before the police magistrate or justice of the peace within one week from the date of the filing of the complaint, and no adjournment shall be taken for a period longer than one week. A daily calendar of all hearings shall be kept by the police magistrate or justice of the peace, and shall be posted in a conspicuous place in his court room or office for at least one day before the date of such hearings. The police magistrate or justice of the peace shall render his decision within eight days from the time the matter is finally submitted to him. Said police magistrate or justice of the peace shall keep a record of all such complaints and hearings. The said mayor or other said officer may refuse to issue and may revoke any license for any good cause shown, within the meaning and purpose of this act, and when it is shown to his satisfaction that any licensed person is guilty of any immoral, fraudulent or illegal conduct, in connection with the conduct of said business, it shall be his duty to revoke the license of such persons; but notice of the charges shall be presented and reasonable opportunity shall be given said licensed person to defend himself. Whenever for any cause such license is revoked, license shall not be issued to said licensed person or his representative, or to any person with whom he is to be associated in the business of furnishing employment. The violation of any provision of this act, except as provided in sections two and six, shall be punishable by a fine not to exceed twenty-five dollars, and any city magistrate, police justice, justice of the peace, or any inferior magistrate having original jurisdiction in criminal cases, shall have power to impose said fine, and in default of payment thereof to commit the person so offending for a period not exceeding thirty days. Any person may institute criminal proceedings for its enforcement before any court of competent jurisdiction.

Approved May 28, 1907.

CHAPTER 257.—*Department of labor.*

[See Bulletin No. 73, pp. 910, 911.]

NEW YORK.

ACTS OF 1907.

CHAPTER 83.—*Examination, etc., of horseshoers.*

SECTION 1. Article thirteen * * * of chapter four hundred and fifteen of the laws of eighteen hundred and ninety-seven, * * * as amended by chapter five hundred and fifty-eight of the laws of eighteen hundred and ninety-nine, is hereby repealed.

Became a law March 27, 1907.

[This article related to the examination and licensing of horseshoers.]

CHAPTER 208.—*Inspection of locomotive boilers.*

SECTION 1. Section forty-nine-a of chapter five hundred and sixty-five of the laws of eighteen hundred and ninety, * * * as added by chapter six hundred and eleven of the laws of nineteen hundred and five, is hereby amended so as to read as follows:

Section 49-a. It shall be the duty of every railroad corporation operated by steam ower, within this State, and of the directors, managers or superintendents of such

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railroad to cause thorough inspections to be made of the boilers and their appurtenances of all the steam locomotives which shall be used by such corporation or corporations, on said railroads. Said inspections shall be made, at least every three months under the direction and superintendence of said corporations, or the directors, managers or superintendents thereof, by persons of suitable qualifications and attainments to perform the services required of inspectors of boilers, and who from their knowledge of the construction and use of boilers and the appurtenances therewith connected, are able to form a reliable opinion of the strength, form, workmanship and suitableness of boilers, to be employed without hazard of life, from imperfections in material, workmanship or arrangement of any part of such boiler and appurtenances. All such boilers so used shall comply with the following requirements: The boilers must be made of good and suitable materials; the openings for the passage of water and steam respectively, and all pipes and tubes exposed to heat shall be of proper dimensions; the safety valves, fusible plugs, low water glass indicator, gauge cocks and steam gauges, shall be of such construction, condition and arrangement that the same may be safely employed in the active service of the railroad corporation without peril to life; and each inspector shall satisfy himself by thorough examination that said requirements have been fully complied with. No boiler, nor any connection therewith shall be approved which is unsafe in its form, or dangerous from defects, workmanship or other cause. The person or persons who shall make the said inspections if he or they approve of the boiler or boilers and the appurtenances throughout, shall make and subscribe his or their name to a written or printed certificate which shall contain the number of each boiler inspected, the date of its inspection, the condition of the boiler inspected, and such details as may be required by the forms and regulations which shall be prescribed by the railroad commissioners. Every certificate shall be verified by the oath of the inspector, and he shall cause said certificate or certificates to be filed in the office of the railroad commissioners, within ten days after each inspection shall be made, and also a copy thereof with the chief operating officer or employee of such railroad having charge of the operation of such locomotive boiler; a copy shall also be placed by such officer or employee in a conspicuous place in the cab connected with the locomotive boiler inspected, and there kept framed under glass. The railroad commissioners shall have power, from time to time, to formulate rules and regulations for the inspection and testing of boilers as aforesaid, and may require the removal of incompetent inspectors of boilers under the provisions of this act. Copies of such rules and regulations shall be mailed to every corporation operating a railroad by steam in this State. If it shall be ascertained by such inspection and test or otherwise, that any locomotive boiler is unsafe for use, the same shall not again be used until it shall be repaired, and made safe, so as to comply with the requirements of this section. Every corporation, director, manager or superintendent operating such railroad and violating any of the provisions of this section shall be liable to a penalty, to be paid to the people of the State of New York, of one hundred dollars for each offense, and the further penalty of one hundred dollars for each day it or they shall omit or neglect to comply with said provisions, and the making or filing of a false certificate shall be a misdemeanor, and every inspector who wilfully certifies falsely touching any steam boiler, or any appurtenance thereto belonging, or any matter or thing contained or required to be contained in any certificate, signed and sworn to by him, shall be guilty of a misdemeanor. Any person, upon application to the secretary of said board of railroad commissioners, and on the payment of such reasonable fee as said board may by rule fix, shall be furnished with a copy of any such certificate.

SEC. 2. Such chapter is hereby amended by inserting therein a new section to be section forty-nine-c and to read as follows:

Sec. 49-c. It shall be the duty of every corporation operating a steam railroad, within this State, and of its directors, managers or superintendents, to cause the boiler of every locomotive used on such railroad to be washed out as often as once every thirty days, and to equip each boiler with, and maintain thereon at all times, a water glass, showing the height of water in the boiler, having two valves or shut-off cocks, one at each end of such glass, which valves or shut-off cocks shall be so constructed that they can be easily opened and closed by hand; also to cause such valves or shut-off cocks and all gauge cocks or try cocks attached to the boiler to be removed and cleaned whenever the boiler is washed out pursuant to the foregoing requirements of this section; also to keep all steam valves, cocks and joints, studs, bolts and seams in such repair that they will not at any time emit steam in front of the engineer, so as to obscure his vision. No locomotive shall hereafter be driven in this State unless the same is equipped and cared for in conformity with the provisions of this section; but nothing here contained shall be construed to excuse the observance of any other requirement imposed by this chapter upon railroad corporations, their

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directors, officers, managers and superintendents. Every corporation, person or persons operating a steam railroad and violating any of the provisions of this section, shall be liable to a penalty of one hundred dollars for each offense, and the further penalty of ten dollars for each day that such violation shall continue. The board of railroad commissioners shall enforce the provisions of this act.

Became a law April 25, 1907.

CHAPTER 291.—*Employment of children—Employment certificates.*

[See Bulletin No. 73, pp. 759, 760.]

CHAPTER 399.—*Mine regulations.*

SECTION 1. Sections one hundred and twenty, one hundred and twenty-one, one hundred and twenty-two, one hundred and twenty-three, one hundred and twenty-four, one hundred and twenty-five, one hundred and twenty-six, one hundred and twenty-seven, one hundred and twenty-eight and one hundred and twenty-nine of chapter four hundred and fifteen of the laws of eighteen hundred and ninety-seven, entitled "An act in relation to labor, constituting chapter thirty-two of the general laws," are hereby amended to read as follows:

Section 120. The commissioner of labor shall see that every necessary precaution is taken to insure the safety and health of employees employed in the mines and quarries and in the construction of tunnels of the State and shall prescribe rules and regulations therefor; keep a record of the names and location of such mines, tunnels and quarries, and the names of the persons or corporations owning or operating the same; collect data concerning the working thereof; examine carefully into the method of timbering shafts, drifts, inclines, slopes and tunnels, through which employees and other persons pass, in the performance of their daily labor, and see that the persons or corporations owning and operating such mines, and quarries and constructing tunnels comply with the provisions of this chapter; and such information shall be furnished by the person operating such mine, tunnel or quarry, upon demand of the commissioner of labor. The commissioner of labor shall keep a record of all mine, tunnel and quarry examinations, showing the date thereof, and the condition in which the mines, tunnels and quarries are found, and the manner of working same. He shall make an annual report to the legislature during the month of January, containing a statement of the number of mines, tunnels and quarries visited, the number in operation, the number of men employed, and the number and cause of accidents, fatal and nonfatal, that may have occurred in and about the same.

Sec. 121. If, in the opinion of the commissioner of labor it is necessary for safety of employees, the owner, operator or superintendent of a mine, operating through either a vertical or inclined shaft, or a horizontal tunnel, shall not employ any person therein unless there are in connection with the subterranean workings thereof not less than two openings or outlets, at least one hundred and fifty feet apart, and connected with each other. Such openings or outlets shall be so constructed as to provide safe and distinct means of ingress and egress from and to the surface, at all times, for the use of the employees of such mine.

Sec. 122. In each mine or tunnel a ventilating current shall be conducted and circulated along the face of all working places and through the roadways, in sufficient quantities to insure the safety of employees and remove smoke and noxious gases. Each owner, agent, manager or lessee of a mine or tunnel shall cause it to be properly timbered, and the roof and sides of each working place therein properly secured. No person shall be required or permitted to work in an unsafe place or under dangerous material, except to make it secure.

Sec. 123. No person shall ride or be permitted to ride on any loaded car, cage or bucket into or out of a mine or tunnel in process of construction. No powder or oils of any description shall be stored in a mine, tunnel or quarry or in or around shafts, engine or boiler houses, and all supplies of an inflammable and destructive nature shall be stored at a safe distance from the mine or tunnel openings.

Sec. 124. All boilers used in generating steam for mining or tunneling purposes shall be kept in good order, and the owner, agent, manager or lessee of such mine or tunnel shall have such boilers inspected by a competent person, approved by the commissioner of labor, once in six months, and shall file a certificate showing the result thereof in the mine or tunnel office and a duplicate thereof in the office of the commissioner of labor. All engines, brakes, cages, buckets, ropes and chains shall be kept in good order and inspected daily by the superintendent of the mine or tunnel or a person designated by him. All lifts, hoists, ropes and other mechanical devices shall be properly designed and maintained to sustain the weight intended to be placed

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thereon or suspended therefrom, such factors of safety being used as are generally accepted as sufficient by competent engineers, and all cars and lifts shall be supplied with safety brakes. All hoisting ropes shall at all times be of a breaking strength of not less than five times the gross load suspended from them, including weight of rope itself. Each boiler or battery of boilers used in mining or tunneling for generating steam, shall be provided with a proper safety valve and with steam and water gauges, to show, respectively, the pressure of steam and the height of water in the boilers. Every boiler house in which a boiler or nest of boilers is placed, shall be provided with a steam gauge properly connected with the boilers, and another steam gauge shall be attached to the steam pipe in the engine house, and so placed that the engineer or fireman can readily ascertain the pressure carried. Every tunnel in which men are working under artificial air pressure shall be furnished with properly equipped and placed gauges capable at all times of showing the weight or pressure of air in said tunnel, and said gauge shall at all times during working hours be accessible to all persons working on said tunnel.

Sec. 125. When high explosives other than gunpowder are used in a mine, tunnel or quarry, the manner of storing, keeping, moving, charging and firing, or in any manner using such explosives, shall be in accordance with rules prescribed by the commissioner of labor. In charging holes for blasting, in slate, rock or ore in any mine, tunnel or quarry, no iron or steel pointed needle or tamping bar shall be used, unless the end thereof is tipped with at least six inches of copper or other soft material. No person shall be employed to blast unless the mine or tunnel superintendent or person having charge of such mine or tunnel, is satisfied that he is qualified, by experience, to perform the work with ordinary safety. When a blast is about to be fired in a mine or tunnel timely notice thereof shall be given by the person in charge of the work, to all persons who may be in danger therefrom.

Sec. 126. Whenever loss of life or an accident causing an injury incapacitating any person for work, shall occur in the operation of a mine, tunnel or quarry, the owner, agent, manager or lessee thereof shall immediately report, in writing, all the facts connected therewith to the commissioner of labor.

Sec. 127. If the commissioner of labor, after examination or otherwise, is of the opinion that a mine or tunnel, or anything used in the operation thereof, is unsafe, he shall immediately serve a written notice, specifying the defects, upon the owner, agent, manager or lessee, who shall forthwith remedy the same.

Sec. 128. The commissioner of labor may serve a written notice upon the owner, agent, manager or lessee of a mine or tunnel requiring him to comply with a specified provision of this article. The commissioner of labor shall begin an action in the supreme court to enforce compliance with such provision; and upon such notice as the court directs, an order may be granted, restraining the working of such mine or tunnel during such time as may be therein specified.

Sec. 129. The owner, agent, manager or lessee of a mine or tunnel, at any time, either day or night, shall admit to such mine or tunnel or any building used in the operation thereof, the commissioner of labor or any qualified person duly authorized by him, for the purpose of making the examinations and inspections necessary for the enforcement of this article, and shall render any necessary assistance for such inspections.

SEC. 2. Article nine of said chapter is hereby amended by adding thereto three new sections to be sections one hundred and thirty-four and one hundred and thirty-five and one hundred and thirty-six and to read respectively as follows:

Sec. 134. Every underground working where the depth exceeds forty feet shall be equipped with a proper head house and trapdoors.

Sec. 135. Every mine, tunnel or quarry employing over twenty-five men shall maintain a suitably equipped and heated wash room, which shall be at all times accessible to the men employed.

Sec. 136. No blast shall be exploded by an electric current of more than two hundred and fifty volts.

SEC. 3. Nothing in this act contained shall be construed to affect, limit or vary any liability which has accrued prior to the passage of this act.

Became a law June 3, 1907.

CHAPTER 425.—*Suits for wages—New York City.*

SECTION 1. Section two hundred and seventy-four of chapter five hundred and eighty of the laws of nineteen hundred and two, is hereby amended to read as follows:

Section 274. In an action, brought in the municipal court, by a journeyman, laborer, or other employee whose employment answered to the general description of wage-earner, for services rendered or wages earned in such capacity, if the plaintiff

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recovers a judgment for a sum not exceeding fifty dollars, exclusive of costs, and the action shall have been brought within two months after the cause of action accrued, no property of the defendant is exempt from levy and sale by virtue of an execution against property, issued thereupon; and, if such an execution is returned wholly or partly unsatisfied, the clerk must, upon the application of the plaintiff, issue an execution against the person of the defendant for the sum remaining uncollected, if the indorsement required by this act to the effect that defendant was liable to arrest was complied with. A defendant arrested by virtue of an execution so issued against his person, must be actually confined in the jail, and is not entitled to the liberties thereof; but he must be discharged after having been so confined for fifteen days. After his discharge another execution against his person can not be issued upon the judgment, but the judgment creditor may enforce the judgment against property as if the execution, from which the judgment debtor is discharged, has been returned, without his being taken.

Became a law June 5, 1907.

CHAPTER 429.—*Accidents on railroads—Inspection of appliances.*

SECTION 47. Each commission shall investigate the cause of all accidents on any railroad or street railroad within its district which result in loss of life or injury to persons or property, and which in its judgment shall require investigation. Every common carrier, railroad corporation and street railroad corporation is hereby required to give immediate notice to the commission of every accident happening upon any line of railroad or street railroad owned, operated, controlled or leased by it, within the territory over which such commission has jurisdiction in such manner as the commission may direct. Such notice shall not be admitted as evidence or used for any purpose against such common carrier, railroad corporation or street railroad corporation giving such notice in any suit or action for damages growing out of any matter mentioned in said notice.

SEC. 50. If, in the judgment of the commission having jurisdiction, repairs or improvements to or changes in any tracks, switches, terminals or terminal facilities, motive power, or any other property or device used by any common carrier, railroad corporation or street railroad corporation in or in connection with the transportation of passengers, freight or property ought reasonably to be made, or that any additions should reasonably be made thereto, in order to promote the security or convenience of the public or employees, or in order to secure adequate service or facilities for the transportation of passengers, freight or property, the commission shall, after a hearing either on its own motion or after complaint, make and serve an order directing such repairs, improvements, changes or additions to be made within a reasonable time and in a manner to be specified therein, and every common carrier, railroad corporation and street railroad corporation is hereby required and directed to make all repairs, improvements, changes and additions required of it by any order of the commission served upon it.

Became a law June 6, 1907.

CHAPTER 485.—*Inspection of factories—Wash rooms, etc.*

[See Bulletin No. 73, pp. 917, 918.]

CHAPTER 490.—*Inspection of factories—Ventilation.*

[See Bulletin No. 73, p. 917.]

CHAPTER 505.—*Department of labor—Bureau of mediation and arbitration.*

[See Bulletin No. 73, pp. 913-915, for sections relating to inspection of factories, etc.]

SECTION 140. There shall continue to be a bureau of mediation and arbitration. The second deputy commissioner of labor shall be the chief mediator of the State and in immediate charge of this bureau, but subject to the supervision and direction of the commissioner of labor.

SEC. 141. Whenever a strike or lockout occurs or is seriously threatened an officer or agent of the bureau of mediation and arbitration shall, if practicable, proceed promptly to the locality thereof and endeavor by mediation to effect an amicable settlement of the controversy. If the commissioner of labor deems it advisable the board of mediation and arbitration may proceed to the locality and inquire into the cause thereof, and for that purpose shall have all the powers conferred upon it in the case of a controversy submitted to it for arbitration.

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SEC. 142. There shall continue to be a State board of mediation and arbitration, which shall consist of the chief mediator and two other officers of the department of labor to be from time to time designated by the commissioner of labor. The chief mediator when present shall be the chairman of the board. Two members of such board shall constitute a quorum for the transaction of business, and may hold meetings at any time or place within the State. Examinations or investigations ordered by the board may be held and taken by and before any of their number, if so directed, but a decision rendered in such a case shall not be deemed conclusive until approved by the board.

SEC. 143. A grievance or dispute between an employer and his employees may be submitted to the board of arbitration and mediation for their determination and settlement. Such submission shall be in writing, and contain a statement in detail of the grievance or dispute and the cause thereof, and also an agreement to abide the determination of the board, and during the investigation to continue in business or at work, without a lockout or strike. Upon such submission, the board shall examine the matter in controversy. For the purpose of such inquiry they may subpœna witnesses, compel their attendance, take and hear testimony, and call for and examine books, papers and documents of any parties to the controversy. Subpœnas shall be issued by the chairman under the seal of the department of labor. Witnesses shall be allowed the same fees as in courts of record. The decision of the board must be rendered within ten days after the completion of the investigation.

SEC. 144. Within ten days after the completion of every arbitration, the board or a majority thereof shall render a decision, stating such details as will clearly show the nature of the controversy and the points disposed of by them, and make a written report of their findings of fact and of their recommendations to each party of the controversy. Every decision and report shall be filed in the office of the board and a copy thereof served upon each party to the controversy.

SEC. 145. The commissioner of labor shall make an annual report to the legislature of the operations of this bureau.

SEC. 146. A grievance or dispute between an employer and his employees may be submitted to a board of arbitrators, consisting of three persons, for hearing and settlement. When the employees concerned are members in good standing of a labor organization, one arbitrator may be appointed by such organization and one by the employer. The two so designated shall appoint a third, who shall be chairman of the board. If such employees are not members of a labor organization, a majority thereof at a meeting duly called for that purpose, may designate one arbitrator for such board.

SEC. 147. Before entering upon his duties, each arbitrator so selected shall sign a consent to act and take and subscribe an oath to faithfully and impartially discharge his duties as such arbitrator, which consent and oath shall be filed in the clerk's office of the county or counties where the controversy arose. When such board is ready for the transaction of business, it shall select one of its members to act as secretary, and notice of the time and place of hearing shall be given to the parties to the controversy. The board may, through its chairman, subpœna witnesses, compel their attendance and take and hear testimony. The board may make and enforce rules for its government and the transaction of the business before it, and fix its sessions and adjournments.

SEC. 148. The board shall, within ten days after the close of the hearing, render a written decision signed by them giving such details as clearly show the nature of the controversy and the questions decided by them. One copy of the decision shall be filed in the office of the clerk of the county or counties where the controversy arose and one copy shall be transmitted to the bureau of mediation and arbitration.

Became a law June 15, 1907.

CHAPTER 506.—*Violations of labor law.*

SECTION 1. Section three hundred and eighty-four-h of the penal code, * * * is hereby amended to read as follows:

Section 384-h. Any person or corporation,

1. Who, contracting with the State or a municipal corporation, shall require more than eight hours work for a day's labor; or

2. Who shall require more than ten hours labor, including one-half hour for dinner, to be performed within twelve consecutive hours, by the employees of a street surface and elevated railway owned or operated by corporations whose main [illegible] travel or routes lie principally within the corporate limits of cities of [illegible] dred thousand inhabitants; or

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3. Who shall require the employees of a corporation owning or operating a brick-yard to work contrary to the requirements of section six of the labor law; or,

4. (As amended by chapter 523.) Who shall require or permit any employee engaged in or connected with the movement of any train of a corporation operating a line of railroad of thirty miles in length, or over, in whole or in part within this State, to remain on duty more than sixteen consecutive hours; or to require or permit any such employee who has been on duty sixteen consecutive hours to go on duty without having had at least ten hours off duty; or to require or permit any such employee who has been on duty sixteen hours in the aggregate in any twenty-four hour period, to continue on duty or to go on duty without having had at least eight hours off duty within such twenty-four hour period; except when by casualty occurring after such employee has started on his trip, or by unknown casualty occurring before he started on his trip, and except when by accident or unexpected delay of trains scheduled to make connection with the train on which such employee is serving, he is prevented from reaching his terminal; is guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than five hundred nor more than one thousand dollars for each offense. If any contractor with the State or a municipal corporation shall require more than eight hours for a day's labor, upon conviction therefor in addition to such fine, the contract shall be forfeited at the option of the municipal corporation.

SEC. 2. Section three hundred and eighty-four-1 of the penal code, * * * is hereby amended to read as follows:.

SEC. 384-1. Any person who violates or does not comply with:

1. The provisions of article two of the labor law, relating to the department of labor;

2. The provisions of article three of the labor law, relating to the bureau of labor statistics;

3. The provisions of article five of the labor law, relating to the bureau of factory inspection;

4. The provisions of article six of the labor law, relating to factories;

5. The provisions of article seven of the labor law, relating to the manufacture of articles in tenements;

6. The provisions of article eight of the labor law, relating to bakeries and confectionery establishments;

7. The provisions of article eleven of the labor law, relating to mercantile establishments, and the employment of women and children therein;

8. And any person who knowingly makes a false statement in or in relation to any application made for an employment certificate as to any matter required by articles six and eleven of the labor law to appear in any affidavit, record, transcript or certificate therein provided for, is guilty of a misdemeanor and upon conviction shall be punished for a first offense by a fine of not less than twenty nor more than fifty dollars; for a second offense by a fine of not less than fifty nor more than two hundred dollars, or by imprisonment for not more than thirty days or by both such fine and imprisonment; for a third offense by a fine of not less than two hundred and fifty dollars, or by imprisonment for not more than sixty days, or by both such fine and imprisonment.

Became a law June 15, 1907.

CHAPTER 507.—*Hours of labor of women and children.*

[See Bulletin No. 73, pp. 761, 762.]

CHAPTER 585.—*Employment of children—School attendance.*

[See Bulletin No. 73, pp. 756-758.]

CHAPTER 588.—*Employment of children—Street trades.*

[See Bulletin No. 73, pp. 765-767.]

CHAPTER 627.—*Hours of labor of employees on railroads.*

SECTION 1. Chapter four hundred and fifteen of the laws of eighteen hundred and ninety-seven, * * * is hereby amended by adding a new section after section seven thereof, to be section seven-a, to read as follows:

Section 7-a. The provisions of section seven of this chapter shall not be applicable to employees mentioned herein. It shall be unlawful for any corporation or receiver, operating a line of railroad, either surface, subway or elevated, in whole or in part, in the State of New York, or any officer, agent or representative of such corporation or receiver to require or permit any telegraph or telephone operator who spaces trains

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by the use of the telegraph or telephone under what is known and termed the "block system" (defined as follows): Reporting trains to another office or offices or to a train dispatcher operating one or more trains under signals, and telegraph or telephone levermen who manipulate interlocking machines in railroad yards or on main tracks out on the lines or train dispatchers in its service whose duties substantially, as hereinbefore set forth, pertain to the movement of cars, engines or trains on its railroad by the use of the telegraph or telephone in dispatching or reporting trains or receiving or transmitting train orders as interpreted in this section, to be on duty for more than eight hours in a day of twenty-four hours, and it is hereby declared that eight hours shall constitute a day of employment for all laborers or employees engaged in the kind of labor aforesaid; except in cases of extraordinary emergency caused by accident, fire, flood or danger to life or property and for each hour of labor so performed in any one day in excess of such eight hours, by any such employee, he shall be paid in addition at least, one-eighth of his daily compensation. Any person or persons, company or corporation, who shall violate any of the provisions of this section, shall, on conviction, be fined in the sum not less than one hundred dollars, and such fine shall be recovered by an action in the name of the State of New York, for the use of the State, which shall sue for it against such person, corporation or association violating this act, said suit to be instituted in any court in this State having appropriate jurisdiction. Such fine, when recovered as aforesaid, shall be paid without any deduction whatever, one-half thereof to the informer, and the balance thereof to be paid into the free school fund of the State of New York. The provisions of this act shall not apply to any part of a railroad where not more than eight regular passenger trains in twenty-four hours pass each way: *Provided, moreover*, That where twenty freight trains pass each way generally in each twenty-four hours then the provisions of this act shall apply, notwithstanding that there may pass a less number of passenger trains than hereinbefore set forth, namely eight.

Became a law July 19, 1907.

NORTH CAROLINA.

ACTS OF 1907.

CHAPTER 330.—*Intoxication of employees on railroads.*

SECTION 1. Section three thousand seven hundred and fifty-eight (chapter eighty-one) of the Revisal of One Thousand Nine Hundred and Five [shall] be stricken out and the following substituted in lieu thereof: "Any train dispatcher, telegraph operator, engineer, fireman, flagman, brakeman, switchman, conductor, motorman, or other employee of any steam, street, suburban or interurban railway company, who shall be intoxicated while engaged in running or operating, or assisting in running or operating, any railway train, shifting engine, street or other electric car, shall be guilty of a misdemeanor, and upon conviction shall be fined or imprisoned, in the discretion of the court."

Ratified this the 23d day of February, A. D. 1907.

CHAPTER 456.—*Hours of labor of employees on railroads.*

SECTION 1. It shall be unlawful for any railroad company doing business in the State of North Carolina, or for any officer, agent or employee thereof who has the direction of or control over any employee or agent of the classes mentioned below, to cause or knowingly permit or allow any employee belonging to any such class to render any service for such railroad company pertaining to the movement of trains, for a greater number of hours in any twenty-four hours than is hereinafter specified, to wit:

(a) Any employee doing the work of a train dispatcher (or telegraph operator), having in charge in any degree the direction of the movement of any train or trains in North Carolina, for more than eight hours in any twenty-four hours: *Provided*, The corporation commission of North Carolina is hereby authorized to permit any such telegraph operator at any station on any road in this State to work for a longer time, not exceeding twelve hours in any twenty-four hours, where the said corporation commission shall determine that the safety of the traveling public will not be endangered by such extension of hours.

(b) Any conductor, flagman, engineer, brakeman, fireman or other member of any train crew, for more than sixteen hours in any twenty-four hours.

SEC. 2. Any railroad company, or officer or agent thereof, having the direction or control over any employee mentioned in section one of this act, who

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of the provisions hereof, shall be guilty of a misdemeanor, and upon conviction such railroad company shall be fined not less than five hundred dollars; and such officer or agent shall be fined or imprisoned, or both, in the discretion of the court.

SEC. 3. Any train dispatcher or telegraph operator, having in charge in any degree the direction of the movement of any train or trains in North Carolina, who shall work more than eight hours in any twenty-four hours as an employee performing the duties aforesaid, except as shall be permitted by the corporation commission under the provisions of this act, shall be guilty of a misdemeanor, and upon conviction shall be fined or imprisoned, in the discretion of the court.

SEC. 4. Any conductor, flagman, fireman, engineer, brakeman, or other member of any train crew, who shall work for any railroad company more than sixteen hours in any twenty-four hours, shall be guilty of a misdemeanor, and upon conviction shall be fined or imprisoned, or both, in the discretion of the court: *Provided*, That it shall not be held a violation of this act by any conductor, brakeman, flagman, engineer, fireman or other member of any train crew who shall work more than sixteen hours in any twenty-four hours in order to clear the track or tracks of said railroad company from wrecks, washouts, or obstruction caused by the act of God, so that they may bring the train or trains operated by them to a station on said road, which station shall be either the schedule destination of said train or the station at which there is regularly a change of train crews; nor shall it be held a violation of this act by the corporation, officers or agents thereof, to permit the said conductor, flagman, brakeman, fireman, engineer or other member of a train crew to work overtime under the circumstances and conditions hereinbefore stated.

Ratified this the 4th day of March, A. D. 1907.

CHAPTER 463.—*Employment of children.*

[See Bulletin No. 73, p. 769.]

NORTH DAKOTA.

ACTS OF 1907.

CHAPTER 52.—*Mine regulations—Inspection.*

SECTION 1. Sections 7608 and 7609 of the Revised Codes of 1905 are amended so as to read as follows:

Section 7608. There shall be a State engineer, who shall be a technically qualified and experienced hydraulic engineer, to be appointed by the governor and such appointment confirmed by the senate. He shall hold office for the term of four years from and after his appointment, or until his successor shall have been appointed and shall have qualified. He shall not engage in private practice. He shall have general supervision of the waters of the State and of the measurement and appropriation thereof, and shall receive a salary of two thousand five hundred dollars per annum and actual necessary traveling expenses while away from his office in the discharge of official duties; and until otherwise provided by law he shall be ex-officio State coal mine inspector, and it is hereby made his duty immediately after the taking effect of this act to make a thorough inspection of all lignite mines in the State that are being worked, and report to the governor in detail on each mine, the depth and thickness of the vein, the average number of tons mined daily and the annual output, the selling price per ton at the mine, the number of men employed and the wages paid, the manner of mining and the machinery used, the rate per ton paid for mining, the condition of each mine with reference to the safety of the employees, what mines, if any, are on school or institution lands, and such further information as he may deem proper to report; and it shall be the duty of every mine owner, superintendent or manager of every mine, to give the inspector free access to the mine and any information which he may desire with reference to the mine and its management. Whenever the board of university and school lands shall request the State engineer to investigate any particular piece of land granted to the State under the enabling act for the purpose of determining whether or not it is coal-bearing within the meaning of the constitution, it shall be his duty to do so and report his conclusions and the basis on which they are founded to said board; but in making such investigations and reports he shall, whenever practicable, call to his assistance and consult with the dean of the school of mines (college of mining engineering) and the professor of geology at the agricultural college.

Sec. 7609. The State engineer shall have power to appoint from time to time, during the season of the year when field work is practicable, one or more assistant engineers, one of whom shall be a graduate from one of the leading technical universities of the country, as a mining engineer, at a salary not to exceed one thousand eight hundred

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dollars per annum and actual and necessary traveling expenses while away from the office in the discharge of official duties. The State engineer may employ other and additional assistants and purchase materials and supplies for the proper conduct and maintenance of his office and department, in pursuance of appropriations as made from time to time for such purposes. The salaries and expenses of the office of the State engineer shall be paid at the same times and in the same manner as those of other officers of the State. The office of the State engineer shall be located at the seat of government.

Approved March 14, 1907.

CHAPTER 98.—*Employment of children—School attendance.*

[See Bulletin No. 73, p. 770.]

CHAPTER 173.—*Employment of labor—Term.*

SECTION 1. Section 5572 of the Revised Codes of North Dakota for 1905 is amended and reenacted to read as follows:

Section 5572. A servant is presumed to be hired for such length of time as the parties shall agree upon. A hiring at a monthly rate is to be presumed to be for one month or such number of months as may be agreed upon. A hiring for the season shall be presumed to be from the date of such hiring to November 1st of the year of such hiring. A hiring at a yearly rate is presumed to be for one year. A hiring at a daily rate shall be presumed to be an entire contract for as many days as the parties agree upon, and such contract shall not be presumed to be for one day. A hiring by piecework, for no specified time.

Approved March 13, 1907.

CHAPTER 203.—*Liability of railroad companies for injuries to employees.*

[See Bulletin No. 74, pp. 77, 78.]

CHAPTER 205.—*Accidents on railroads.*

SECTION 1. It shall be the duty of every railroad company operating a line of railway in this State to report to the railroad commissioners of this State all accidents, wrecks or casualties occurring in the operation of trains on said line or lines of railway within this State, coming within the knowledge of the company, wherein any person is either killed or injured, within reasonable time, not exceeding sixty days, in such form as the railroad commissioners may require.

SEC. 2. Whenever any such report is made to such railroad commissioners they shall forthwith examine into the causes and circumstances of such wreck, accident or casualty, and it shall thereupon be the duty of said railroad commissioners to order such railroad company to comply with any reasonable requirements prescribed by said railroad commissioners, calculated to prevent the recurrence of any such wreck, accident or casualty, and it shall be the duty of said railroad commissioners to report to the legislature biennially a summarized statement of all wrecks, accidents or casualties that have come to their knowledge by reason of this act, together with a recommendation of such additional legislation as they deem proper for the greater protection of passengers and employees of such railroads.

SEC. 3. Every person who shall violate any of the provisions of this act shall be guilty of a misdemeanor and shall be punished by a fine of not less than five hundred dollars, nor more than two thousand dollars, or imprisonment in the county jail for not less than thirty days, nor more than one year, or shall suffer both such fine and imprisonment in the discretion of the court.

Approved March 7, 1907.

CHAPTER 207.—*Hours of labor of employees on railroads.*

SECTION 1. It shall be unlawful for any railroad, railroad corporation or common carrier, engaged in commerce in whole or in part within this State, or any of its officers or agents, to require or permit any employees engaged in or connected with the movement of any train in which commerce is hauled within the State, or to require or permit any employee engaged in or connected with the movement of any train carrying freight or passengers within the State, to remain on duty more than sixteen consecutive hours, except when by casualty, storms, wrecks, washouts, snow blockades or any unavoidable delay arising from like causes he is prevented from reaching his terminal;

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or to require or permit any such employee who has been on duty sixteen consecutive hours to go on any duty without having at least eight hours' rest.

SEC. 2. Any such railroad, railroad corporation, common carrier, or any of its officers or agents, violating any of the provisions of this act shall be deemed guilty of misdemeanor and shall, upon conviction thereof in any district court of the State of competent jurisdiction, be subject to a fine of not less than one hundred dollars nor more than one thousand dollars for each offense; and it shall be the duty of the railroad commissioners to fully investigate all cases of any violation of this act and said railroad commissioners shall forthwith notify the attorney-general of such violation thereof as may come to their knowledge, and it shall be the duty of the attorney-general to prosecute or cause to be prosecuted all violations thereof.

Approved March 8, 1907.

OKLAHOMA.

CONSTITUTION OF 1907.

ARTICLE VI.—*Commissioner of labor—Mine inspector.*

SECTION 1. The executive authority of the State shall be vested in a * * * chief mine inspector, commissioner of labor, * * * each of whom shall keep his office and public records, books, and papers at the seat of government, and shall perform such duties as may be designated in this constitution or prescribed by law.

SEC. 20. A department of labor is hereby created to be under the control of a commissioner of labor who shall be elected by the people, whose term of office shall be four years, and whose duties shall be prescribed by law.

SEC. 21. The legislature shall create a board of arbitration and concilation in the department of labor and the commissioner of labor shall be ex-officio chairman.

SEC. 25. The office of chief inspector of mines, oil, and gas is hereby created, and the incumbent of said office shall be known as the chief mine inspector. The term of said office shall be four years, and no person shall be elected to said office unless he shall have had eight years' actual experience as a practical miner, and such other qualifications as may be prescribed by the legislature. The chief mine inspector shall perform the duties, take the oath, and execute the bond prescribed by the legislature.

SEC. 26. The legislature shall create mining districts and provide for the appointment or election of assistant inspectors therein, who shall be under the general control of the chief mine inspector, and the legislature shall define their qualifications and duties and fix their compensation.

ARTICLE IX.—*Liability of employers for injuries to employees.*

[See Bulletin No. 74, p. 80.]

ARTICLE IX.—*Corporations—Arbitration of labor disputes.*

SECTION 42. Every license issued or charter granted to a mining or public service corporation, foreign or domestic, shall contain a stipulation that such corporation will submit any difference it may have with employees in reference to labor, to arbitration, as shall be provided by law.

SEC. 44. No foreign corporation shall be authorized to carry on in this State any business which a domestic corporation is prohibited from doing, or be relieved from compliance with any of the requirements made of a similar domestic corporation by the constitution or laws of the State. Nothing in this article, however, shall restrict or limit the power of the legislature to impose conditions under which foreign corporations may be licensed to do business in this State.

ARTICLE XXIII.—*Labor—Employment of children—Actions for injuries.*

SECTION 1. Eight hours shall constitute a day's work in all cases of employment by and on behalf of the State or any county or municipality.

SEC. 2. The contracting of convict labor is hereby prohibited.

SEC. 3. The employment of children, under the age of fifteen years, in any occupation, injurious to health or morals or especially hazardous to life or limb, is hereby prohibited.

SEC. 4. Boys under the age of sixteen years, and women and girls, shall not be employed, underground, in the operation of mines; and, except in cases of emergency, eight hours shall constitute a day's work underground in all mines of the State.

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SEC. 5. The legislature shall pass laws to protect the health and safety of employees in factories, in mines, and on railroads.

SEC. 6. The defense of contributory negligence or of assumption of risk shall, in all cases whatsoever, be a question of fact, and shall, at all times, be left to the jury.

SEC. 7. The right of action to recover damages for injuries resulting in death shall never be abrogated, and the amount recoverable shall not be subject to any statutory limitation.

SEC. 8. Any provision of a contract, express or implied, made by any person, by which any of the benefits of this constitution, is sought to be waived, shall be null and void.

SEC. 9. Any provision of any contract or agreement, express or implied, stipulating for notice or demand other than such as may be provided by law, as a condition precedent to establish any claim, demand, or liability, shall be null and void.

UNITED STATES.

ACTS OF FIRST SESSION, SIXTIETH CONGRESS, 1907-8.

CHAPTER 149.—*Liability of railroad companies for injuries to employees.*

SECTION 1. Every common carrier by railroad while engaging in commerce between any of the several States or Territories, or between any of the States and Territories, or between the District of Columbia and any of the States or Territories, or between the District of Columbia or any of the States or Territories and any foreign nation or nations, shall be liable in damages to any person suffering injury while he is employed by such carrier in such commerce, or, in case of the death of such employee, to his or her personal representative, for the benefit of the surviving widow or husband and children of such employee; and, if none, then of such employee's parents; and, if none, then of the next of kin dependent upon such employee, for such injury or death resulting in whole or in part from the negligence of any of the officers, agents, or employees of such carrier, or by reason of any defect or insufficiency, due to its negligence, in its cars, engines, appliances, machinery, track, roadbed, works, boats, wharves, or other equipment.

SEC. 2. Every common carrier by railroad in the Territories, the District of Columbia, the Panama Canal Zone, or other possessions of the United States shall be liable in damages to any person suffering injury while he is employed by such carrier in any of said jurisdictions, or, in case of the death of such employee, to his or her personal representative, for the benefit of the surviving widow or husband and children of such employee; and, if none, then of such employee's parents; and, if none, then of the next of kin dependent upon such employee, for such injury or death resulting in whole or in part from the negligence of any of the officers, agents, or employees of such carrier, or by reason of any defect or insufficiency, due to its negligence, in its cars, engines, appliances, machinery, track, roadbed, works, boats, wharves, or other equipment.

SEC. 3. In all actions hereafter brought against any such common carrier by railroad under or by virtue of any of the provisions of this act to recover damages for personal injuries to an employee, or where such injuries have resulted in his death, the fact that the employee may have been guilty of contributory negligence shall not bar a recovery, but the damages shall be diminished by the jury in proportion to the amount of negligence attributable to such employee: *Provided*, That no such employee who may be injured or killed shall be held to have been guilty of contributory negligence in any case where the violation by such common carrier of any statute enacted for the safety of employees contributed to the injury or death of such employee.

SEC. 4. In any action brought against any common carrier under or by virtue of any of the provisions of this act to recover damages for injuries to, or the death of, any of its employees, such employee shall not be held to have assumed the risks of his employment in any case where the violation by such common carrier of any statute enacted for the safety of employees contributed to the injury or death of such employee.

SEC. 5. Any contract, rule, regulation, or device whatsoever, the purpose or intent of which shall be to enable any common carrier to exempt itself from any liability created by this act, shall to that extent be void: *Provided*, That in any action brought against any such common carrier under or by virtue of any of the provisions of this act, such common carrier may set off therein any sum it has contributed or paid to any insurance, relief benefit, or indemnity that may have been paid to the injured employee or the person entitled thereto on account of the injury or death for which said action was brought.

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SEC. 6. No action shall be maintained under this act unless commenced within two years from the day the cause of action accrued.

SEC. 7. The term "common carrier" as used in this act shall include the receiver or receivers or other persons or corporations charged with the duty of the management and operation of the business of a common carrier.

SEC. 8. Nothing in this act shall be held to limit the duty or liability of common carriers or to impair the rights of their employees under any other act or acts of Congress, or to affect the prosecution of any pending proceeding or right of action under the act of Congress entitled "An act relating to liability of common carriers in the District of Columbia and Territories, and to common carriers engaged in commerce between the States and between the States and foreign nations to their employees," approved June eleventh, nineteen hundred and six.

Approved, April 22, 1908.

CHAPTER 186.—*Mine explosions—Investigation.*

The following sums are hereby appropriated

* * * * * * *

DEPARTMENT OF THE INTERIOR.

* * * * * * *

For continuing the work authorized by the act approved March third, eighteen hundred and ninety-one [inspection, etc., of mines], and for the protection of the lives of miners in the Territories and in the District of Alaska, and for conducting investigations as to the causes of mine explosions with a view to increasing safety in mining, to be immediately available, one hundred and fifty thousand dollars, of which sum not more than fifty thousand dollars may be used as salaries.

* * * * * * *

Approved, May 22, 1908.

CHAPTER 200.—*Safety appliances on railroads—Inspection—Tests.*

* * * * * * *

Hereafter all inspectors employed for the enforcement of said act [to promote the safety of employees and travelers upon railroads] shall also be required to make examination of the construction, adaptability, design, and condition of all mail cars used on any railroad in the United States and make report thereon, a copy of which report shall be transmitted to the Postmaster-General.

Hereafter the Interstate Commerce Commission shall be, and is, hereby authorized, at its discretion, to investigate, test experimentally, and report on the use and need of any appliances or systems intended to promote the safety of railway operation which may be furnished in completed shape to such Commission for such investigation and test entirely free of cost to the Government. For this purpose the Commission is authorized to employ persons familiar with the subject to be investigated and tested, and may also make use of its regular employees for such purposes.

* * * * * * *

Approved, May 27, 1908.

CHAPTER 225.—*Safety appliances on railroads—Ash pans.*

SECTION 1. On and after the first day of January, nineteen hundred and ten, it shall be unlawful for any common carrier engaged in interstate or foreign commerce by railroad to use any locomotive in moving interstate or foreign traffic, not equipped with an ash pan, which can be dumped or emptied and cleaned without the necessity of any employee going under such locomotive.

SEC. 2. On and after the first day of January, nineteen hundred and ten, it shall be unlawful for any common carrier by railroad in any Territory of the United States or the District of Columbia to use any locomotive not equipped with an ash pan, which can be dumped or emptied and cleaned without the necessity of any employee going under such locomotive.

SEC. 3. Any such common carrier using any locomotive in violation of any of the provisions of this act shall be liable to a penalty of two hundred dollars for each and every such violation, to be recovered in a suit or suits to be brought by the United States district attorney in the district court of the United States having jurisdiction in the locality where such violation shall have been committed; and it shall be the

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duty of such district attorney to bring such suits upon duly verified information being lodged with him of such violation having occurred; and it shall also be the duty of the Interstate Commerce Commission to lodge with the proper district attorneys information of any such violations as may come to its knowledge.

SEC. 4. It shall be the duty of the Interstate Commerce Commission to enforce the provisions of this act, and all powers heretofore granted to said Commission are hereby extended to it for the purpose of the enforcement of this act.

SEC. 5. The term "common carrier" as used in this act shall include the receiver or receivers or other persons or corporations charged with the duty of the management and operation of the business of a common carrier.

SEC. 6. Nothing in this act contained shall apply to any locomotive upon which, by reason of the use of oil, electricity, or other such agency, an ash pan is not necessary.

Approved, May 30, 1908.

CHAPTER 236.—*Compensation for injuries to employees of the United States.*

SECTION 1. When, on or after August first, nineteen hundred and eight, any person employed by the United States as an artisan or laborer in any of its manufacturing establishments, arsenals, or navy-yards, or in the construction of river and harbor or fortification work or in hazardous employment on construction work in the reclamation of arid lands or the management and control of the same, or in hazardous employment under the Isthmian Canal Commission, is injured in the course of such employment, such employee shall be entitled to receive for one year thereafter, unless such employee, in the opinion of the Secretary of Commerce and Labor, be sooner able to resume work, the same pay as if he continued to be employed, such payment to be made under such regulations as the Secretary of Commerce and Labor may prescribe: *Provided*, That no compensation shall be paid under this act where the injury is due to the negligence or misconduct of the employee injured, nor unless said injury shall continue for more than fifteen days. All questions of negligence or misconduct shall be determined by the Secretary of Commerce and Labor.

SEC. 2. If any artisan or laborer so employed shall die during the said year by reason of such injury received in the course of such employment, leaving a widow, or a child or children under sixteen years of age, or a dependent parent, such widow and child or children and dependent parent shall be entitled to receive, in such portions and under such regulations as the Secretary of Commerce and Labor may prescribe, the same amount, for the remainder of the said year, that said artisan or laborer would be entitled to receive as pay if such employee were alive and continued to be employed: *Provided*, That if the widow shall die at any time during the said year her portion of said amount shall be added to the amount to be paid to the remaining beneficiaries under the provisions of this section, if there be any.

SEC. 3. Whenever an accident occurs to any employee embraced within the terms of the first section of this act, and which results in death or a probable incapacity for work, it shall be the duty of the official superior of such employee to at once report such accident and the injury resulting therefrom to the head of his bureau or independent office, and his report shall be immediately communicated through regular official channels to the Secretary of Commerce and Labor. Such report shall state, first, the time, cause, and nature of the accident and injury and the probable duration of the injury resulting therefrom; second, whether the accident arose out of or in the course of the injured person's employment; third, whether the accident was due to negligence or misconduct on the part of the employee injured; fourth, any other matters required by such rules and regulations as the Secretary of Commerce and Labor may prescribe. The head of each Department or independent office shall have power, however, to charge a special official with the duty of making such reports.

SEC. 4. In the case of any accident which shall result in death, the persons entitled to compensation under this act or their legal representatives shall, within ninety days after such death, file with the Secretary of Commerce and Labor an affidavit setting forth their relationship to the deceased and the ground of their claim for compensation under the provisions of this act. This shall be accompanied by the certificate of the attending physician setting forth the fact and cause of death, or the nonproduction of the certificate shall be satisfactorily accounted for. In the case of incapacity for work lasting more than fifteen days, the injured party desiring to take the benefit of this act shall, within a reasonable period after the expiration of such time, file with his official superior, to be forwarded through regular official channels to the Secretary of Commerce and Labor, an affidavit setting forth the grounds of his claim for compensation, to be accompanied by a certificate of the attending physician as to the cause and nature of the injury and probable duration of the incapacity, or the nonproduction of the certificate shall be satisfactorily accounted for. If the Secretary of

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Commerce and Labor shall find from the report and affidavit or other evidence produced by the claimant or his or her legal representatives, or from such additional investigation as the Secretary of Commerce and Labor may direct, that a claim for compensation is established under this act, the compensation to be paid shall be determined as provided under this act and approved for payment by the Secretary of Commerce and Labor.

SEC. 5. The employee shall, whenever and as often as required by the Secretary of Commerce and Labor, at least once in six months, submit to medical examination, to be provided and paid for under the direction of the Secretary, and if such employee refuses to submit to or obstructs such examination his or her right to compensation shall be lost for the period covered by the continuance of such refusal or obstruction.

SEC. 6. Payments under this act are only to be made to the beneficiaries or their legal representatives other than assignees, and shall not be subject to the claims of creditors.

SEC. 7. The United States shall not exempt itself from liability under this act by any contract, agreement, rule, or regulation, and any such contract, agreement, rule, or regulation shall be pro tanto void.

Approved, May 30, 1908.

JOINT RESOLUTION NO. 22.—*Law of New Mexico regulating civil procedure in personal injury cases.*

* * * * * * *

Said law of the Territory of New Mexico [chapter 33, Acts of 1903] is hereby disapproved and declared null and of no effect.

Approved, May 13, 1908.

SENATE RESOLUTION NO. 205.—*Investigation of working conditions, etc., of telegraph and telephone companies.*

The Secretary of the Department of Commerce and Labor is hereby directed to institute an investigation into all the telegraph and telephone companies engaged in the conduct of an interstate business as to the methods used in handling the public's business, the wages paid telegraphers, telephone operators, and other employees of such companies, and the working conditions of the employees thereof, together with a statement of the receipts and expenditures of such companies for a period of five years.

And he is further directed to report the result of such investigation to the Senate on the first Monday in December, nineteen hundred and eight.

Agreed to, May 28, 1908.

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CUMULATIVE INDEX OF LABOR LAWS AND DECISIONS RELATING THERETO.

[This index includes all labor laws enacted since January 1, 1904, and published in successive issues of the Bulletin, beginning with Bulletin No. 57, the issue of March, 1905. Laws enacted previously appear in the Tenth Special Report of the Commissioner of Labor. The decisions indexed under the various headings relate to the laws on the same subjects without regard to their date of enactment and are indicated by the letter "D" in parenthesis following the name of the State. Opinions of the Attorney-General on the construction, etc., of labor laws are similarly indexed, and are indicated by the abbreviation "Op." in parenthesis.]

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Notes concerning the money of the U. S. and other countries, by W. C. Hunt.
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No. 4. Industrial communities: Coal Mining Co. of Blanzy, by W. F. Willoughby.(a)
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DEPARTMENT OF COMMERCE AND LABOR

BULLETIN

OF THE

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No. 78—SEPTEMBER, 1908

ISSUED EVERY OTHER MONTH

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BULLETIN

OF THE

BUREAU OF LABOR.

No. 78. WASHINGTON. SEPTEMBER, 1908.

INDUSTRIAL ACCIDENTS.

BY FREDERICK L. HOFFMAN.

Industrial accidents are casualties occurring chiefly among wage-earners employed in industrial pursuits, this term including all manufacturing and mechanical industries and trade and transportation. A narrow definition limits this class of accidents to factories and workshops, but this seems hardly warranted by the conditions under which the industrial activity of the nation presents itself as a problem in statistical analysis. The scientific definition of the term is, however, of small importance, and the whole subject is practically comprehended in the term "dangerous trades," which implies that the risk, or liability to accident or injury, is because of personal exposure more or less inseparable from the employment.

ACCIDENT FREQUENCY IN THE UNITED STATES.

Thus far no national investigation of the subject of industrial accidents has been made to determine the true accident risk in industry, and the statistical data extant are more or less fragmentary and of only approximate value. The ever increasing legislation for the protection of life and health in industry and the demand for more stringent employers' liability legislation emphasize the need of a more careful consideration of the facts by selected industries than has thus far been possible. In an article on the subject, contributed to the "New Encyclopedia of Social Reform" (1908), it was estimated by the writer that the number of accidents among men em-

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ployed in manufacturing industries for 1906 was 208,300, of which number about 5,000 were fatal and the remainder more or less serious. This estimate, however, was exclusive of accidents in mines and quarries, transportation by land and sea, and all general employments.

For the purpose of arriving at an estimate of the total number of fatal accidents occurring annually among occupied males in the United States at the present time the percentage of occupied males 15 years of age or over is assumed to be the same as at the census of 1900, namely, 30.005 per cent of the total population. The total population of the United States on June 1, 1908, was estimated by the Bureau of the Census to be 86,895,359, and 30.005 per cent of this total, or 26,072,952, represents approximately the number of occupied males 15 years of age or over at that date. The degree of fatal accident frequency (inclusive of homicides, but exclusive of suicides) among occupied males 10 years of age or over was returned by the census of 1900 as 1.13 per 1,000 in the registration States, and in the absence of other data relating to this subject this proportion is considered to represent approximately the accident frequency among all occupied males 15 years of age or over in the United States.[a] By applying this ratio to the total above estimated (26,072,952) it is found that the number of fatal accidents among occupied males 15 years of age or over is approximately 29,462 in 1908. If allowance, however, is made for the probably higher degree of fatal accident frequency in the western portion of the United States, on account of dangerous mining and lumbering industries, the actual number of fatal accidents among occupied males in 1908 is probably somewhere between 30,000 and 35,000. This estimate of the total accident mortality for 1908 of adult males in gainful occupations is the best possible at the present time, and, while there are no very conclusive trade mortality statistics for this country which sufficiently discriminate between accidents which are the result of general conditions and those which are the direct result of the employment, it is probably safe to estimate that half of the accidents are more or less the immediate result of dangerous industries or trades.

[a] The number of deaths from accidents among occupied males in the registration States is not given separately for those 15 years of age or over or for those 10 to 14 years of age, inclusive. While the fatal accident frequency in the latter group is probably lower than among adults, the number of occupied males from 10 to 14 years of age represents but a small proportion of all occupied males (only 3.7 per cent for the United States, according to figures shown in the census report on Occupations for 1900); hence it is concluded that the fatal accident frequency among occupied males 15 years of age or over approximates very closely to that among those 10 years of age or over.

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THE PROBLEM OF ACCIDENT NOTIFICATION.

It has been pointed out in a report of a British departmental committee, appointed to inquire into the notification of industrial accidents that the term "accident" in itself conveys no exact significance. "Accidents," it is said, "gradually shade off into what are not accidents in the ordinary sense of the word, and there is no hard or fast line which determines when a bruise or a cut, for instance, becomes an accident. A distinguishing line can only be drawn artificially by fixing some kind of standard, as has been done by Parliament in every case in which it has imposed upon employers the obligation to report, and it is clear that unless some line is drawn the application of the system will be left to uncertainty, and uniformity in the administration of the act will be rendered impossible." It is evident that some such definition is imperative to avoid misleading conclusions. There is not so much difficulty in the reporting of fatal accidents since most of the deaths, as a rule, occur at the time of the happening of the accident, or very shortly thereafter. The real difficulty lies in an exact definition of nonfatal accidents, which, as such, "gradually shade off into what are not accidents," which leaves a large amount of necessary discretion with those who are by law required to report them. Since the conditions vary considerably with different industries, an exact or trustworthy comparison of the nonfatal accident ratio in one industry often can not be made with the corresponding return of nonfatal accidents in some other industry. This, for illustration, is true of railroad transportation and coal mining, since in the former nonfatal accidents are reported in more detail than in the latter, which leaves a reasonable question of doubt as to the actual number and degree of minor injuries in coal mining operations. Since it is also almost impossible to keep always in mind the widely different statutory requirements in accident reports, the most useful and conclusive investigations are those which are limited to fatal accidents, about which there can never be more than a minor degree of uncertainty or inaccuracy, due to causes and conditions fairly uniform and quite well understood.

DEGREE OF ACCIDENTAL INJURY.

The degree of accidental injury is of necessity one of the most important elements of the industrial accident problem. The most extensive investigation into this subject has been made by the New York State Department of Labor for the five years ending with 1906. Out of 39,244 accidents in factories and workshops reported upon in detail, 80.8 per cent caused temporary disablement, 16.8 per cent caused per-

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manent disablement, 2.2 per cent proved fatal, and 0.2 per cent were ill defined. Of the 80.8 per cent of accidents causing temporary disablement, 19.0 per cent were cuts, 18.9 per cent were lacerations, 18.0 per cent were bruises, 7.1 per cent were burns, 5.8 per cent were fractures, 3.9 per cent were sprains, and 8.1 per cent were other injuries. The details regarding accidents causing permanent disablement were not as fully reported upon and the returns are, therefore, less conclusive. Of the 16.8 per cent of accidents causing permanent disablement, 14.8 per cent were not specified as to the degree of the injury, but 0.6 per cent resulted in loss of one or both hands or feet, 0.6 per cent in internal injury, 0.4 per cent in loss of one or both limbs, and about the same proportion in the loss of one or both eyes. A critical analysis, by Mr. F. S. Crum, regarding the nature and extent of the injuries reported to the Bureau of Factory Inspection of New York State for the period mentioned, has been published in the Spectator (an insurance periodical) for March 19, 1908. From that paper the following table has been prepared:

NUMBER AND PER CENT OF INDUSTRIAL ACCIDENTS IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1906.

[From an analysis by Mr. F. S. Crum, in the Spectator for March 19, 1908, compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1906.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	7,427	18.9
Burns	2,788	7.1
Cuts, etc.	7,469	19.0
Bruises	7,081	18.0
Sprains and dislocations	1,533	3.9
Fractures	2,257	5.8
Other injuries	3,167	8.1
Total, temporary disablement	31,722	80.8
Permanent disablement:		
Partial or complete loss of eyes	170	.4
Partial or complete loss of limbs	156	.4
Partial or complete loss of hands or feet	229	.6
Internal injuries	211	.6
Other injuries	5,814	14.8
Total, permanent disablement	6,580	16.8
Degree of injury not stated	78	.2
Fatal accidents	864	2.2
Total accidents of all degrees	39,244	100.0

A similar analysis of the reports of the British factory inspectors for the period from 1895 to 1906, includes 196,047 accidents to males and 23,120 accidents to females. According to this analysis, which is limited to the adult population, or persons 18 years of age or over, the proportion of fatal accidents in all industrial casualties was 4.8 per cent for males and 0.6 per cent for females.

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NUMBER AND PER CENT OF INDUSTRIAL ACCIDENTS IN THE UNITED KINGDOM TO PERSONS OF EACH SEX 18 YEARS OF AGE OR OVER, BY DEGREE OF INJURY, FOR THE PERIOD 1895 TO 1906.

[Compiled from the Annual Reports of the Chief Inspector of Factories and Workshops of the United Kingdom, 1895 to 1906.]

Degree of accidental injury.	Accidents to—			
	Males.		Females.	
	Total.	Per cent.	Total.	Per cent.
Fatal	9,406	4.8	134	0.6
Nonfatal:				
Loss of right hand or arm	580	.3	65	.3
Loss of left hand or arm	513	.3	45	.2
Loss of part of right hand	9,096	4.6	1,644	7.1
Loss of part of left hand	9,531	4.9	1,126	4.9
Loss of any part of leg or foot	882	.4	14	.1
Fracture of limbs or bones of trunk	6,026	3.1	392	1.7
Fracture of hand or foot	4,668	2.4	573	2.5
Loss of sight of one or both eyes	483	.2	104	.4
Injuries to head and face	20,090	10.2	2,281	9.8
Burns and scalds	26,024	13.3	641	2.8
Lacerations, contusions, etc	108,748	55.5	16,101	69.6
Total, nonfatal	186,641	95.2	22,986	99.4
Total, fatal and nonfatal	196,047	100.0	23,120	1.000

The results of this analysis are most valuable and instructive. It is a matter of regret that similar data are not available for the manufacturing States of this country. American factory inspectors' reports, as a rule, are unfortunately very defective and ineonclusive. Even in the few States requiring the publication of accident statistics the lack of completeness and the absence of uniformity in method of accident reports precludes the possibility of an accurate interstate comparison. In Massachusetts during the ten years ending with 1905 there were reported 17,478 persons injured in industrial accidents, of whom 429, or 2.5 per cent, were injured fatally. It is estimated that about one-third of the accidents in that State have no connection with the occupation. In Rhode Island during the period from 1895 to 1904 there were reported among males 792 accidents in industries, of which 44, or 5.5 per cent, were fatal. Among females in the same State 200 accidents in industries were reported, of which none were fatal. The rule in Rhode Island is that all fatal accidents and all other accidents which prevent the injured person from returning to work within two weeks after the injury must be reported. Of course, under this rule, a large number of minor accidents are not reported, although such injuries may have a very important economic, social, and medical significance. In Michigan, during the period from 1901 to 1905, 2,219 accidents in industries were officially reported by factory inspectors, of which 12.1 per cent were fatal, 13.0 per cent serious, 47.9 per cent severe, and 27.0 per cent slight.

Many accidents, of course, occur which diminish the chances of subsequent longevity, even though they are not fatal, or even very serious at the time of their occurrence. Extensive investigations have

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been made in Germany, where an enormous mass of statistical material is under continuous observation and a matter of accurate record, but the differences in industrial conditions do not warrant the use of German data for valid conclusions regarding corresponding occupations in the United States. It, however, may safely be affirmed that preventable accidents in industrial occupations cause a most serious impairment of industrial efficiency and a resulting diminution of health and longevity, which for private or government insurance purposes requires to be most carefully taken into account. This subject, aside from its importance as a national problem, is of considerable interest to accident and liability insurance companies, whose business has been growing with great rapidity during the last decade, and to life insurance companies, as a factor affecting materially the mortality experience during the early years of policy duration.

FATAL ACCIDENT FREQUENCY IN THE UNITED STATES.

It is necessary, however, at the outset of any extensive inquiry into this subject to take into consideration certain elementary facts of human mortality and accident frequency. As previously stated the normal rate of accident frequency from all causes among occupied males aged 15 years or over in the United States is approximately 1.13 per 1,000. Out of every 100 deaths from all causes among males 15 years of age or over, 9.1 per cent were deaths from accidents, but the proportionate mortality differs materially according to age and occupation. Thus, at ages 15 to 24 the proportion of accidental deaths is 18.2 per cent, at ages 25 to 34 it is 15.3 per cent, decreasing to 13.0 per cent at ages 35 to 44, and to 5.9 per cent at ages 55 to 64, and only 3.3 per cent at ages 65 or over. How many of these accidents were the result of occupation it is not possible to determine with absolute accuracy, but it is safe to assume that about one-half of the deaths from accidents among males are the result of industrial employments.

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG MALES IN THE REGISTRATION AREA OF THE UNITED STATES, BY AGE GROUPS, FOR THE PERIOD 1900 TO 1906.

[Compiled from special reports of the Bureau of the Census on Mortality Statistics, 1900 to 1906.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	134,700	24,512	18.2
25 to 34 years	186,530	28,559	15.3
35 to 44 years	205,930	26,848	13.0
45 to 54 years	205,497	19,526	9.5
55 to 64 years	218,151	12,852	5.9
65 years or over	435,228	14,270	3.3
	1,386,036	126,567	9.1

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CAUSES OF ACCIDENTS IN THE UNITED STATES.

The census of 1900 contains a table which may be utilized to arrive at an approximate estimate of the proportion which industrial accidents bear to the mortality from accidents in general. According to this table 28,073 deaths from accidents among males aged 15 years or over were enumerated in 1900, and 6,719 deaths from accidents among females. Since the proportion of the sexes in the population is about the same, even the mere difference in absolute numbers is decidedly suggestive. Arranged by causes, the disparity in the accident liability of the sexes becomes still more apparent, as follows:

NUMBER AND PER CENT OF DEATHS FROM ACCIDENTS AMONG MALES AND FEMALES 15 YEARS OF AGE OR OVER IN THE UNITED STATES, BY CAUSES, 1900.

[Compiled from the report of the Bureau of the Census on Vital Statistics for 1900. Persons whose ages are reported as unknown are not included.]

Cause of death.	Males.		Females.	
	Number.	Per cent.	Number.	Per cent.
Burns and scalds	757	2.7	1,449	21.6
Drowning	3,125	11.1	353	5.3
Exposure and neglect	209	.7	116	1.7
Gunshot	3,003	10.7	329	4.9
Machinery	300	1.1	7	.1
Railroad	5,619	20.0	395	5.9
Suffocation	450	1.6	147	2.2
Sunstroke	437	1.6	120	1.8
Surgical operations	197	.7	439	6.5
Wounds	598	2.1	35	.5
Other causes	13,378	47.7	3,359	49.5
Total	28,073	100.0	6,719	100.0

The foregoing table emphasizes the higher mortality from accidents among males, due to drowning, gunshot wounds, machinery, railroad casualties, suffocation, sunstroke, and wounds generally. The most important difference, however, is in the large number of unclassified accidents, which include, in all probability, the majority of deaths more or less the immediate result of industrial employment.

SCOPE OF THE PRESENT DISCUSSION.

For the present purpose industrial accidents have been classified broadly according to industry into five groups: (1) Factories and workshops; (2) electrical industries; (3) mines and quarries; (4) transportation by rail; (5) transportation by water, including the fisheries. For each of these groups a few typical employments have been selected to emphasize the problem of accident risk to life and health in particular industries. No extended discussion of the causes of accidents, the degree of injury, or the methods of prevention is possible at the present time. The sources of statistical information are chiefly the statistical reports of the Bureau of Factory Inspection of the State of New York, the accident mortality statistics of the United States census of 1900, the occupation mortality statistics of State of Rhode Island, the reports of mine inspectors, the re

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the Interstate Commerce Commission, the industrial mortality experience of the Prudential Insurance Company of America,(a) and, finally, the reports of British inspectors of factories and workshops, and of the registrar-general of England and Wales on occupation mortality. In the following discussion of accident frequency in specified industries the general facts of accident occurrence, chiefly from a statistical point of view, are considered. The industries selected are all typical and the figures given emphasize the accident problem in particular trades, so far as the very imperfect available information permits.

ACCIDENTS IN FACTORIES AND WORKSHOPS.

ACCIDENTS IN THE METAL TRADES.

In general manufacturing and mechanical industries, probably the most exposed class are men employed in the metal trades, chiefly in the conversion of iron into steel and of steel into the numerous structural shapes, plates, rods, wire, etc. According to the New York State statistics for the five years ending with 1905, there occurred in this industry in that State 8,456 accidents, of which 135, or 1.6 per cent, were fatal. The fatality ratio varied considerably in the different branches of the industry, having been 4 per cent in smelting and refining, 4.1 per cent in rolling mills, 1.1 per cent in the manufacture of engines and boilers, and 1.5 per cent in other metal industries. In metal smelting and refining 88.9 per cent of the accidents caused temporary disablement, while 6.6 per cent caused permanent disablement. Burns in this branch of the industry caused 24.2 per cent of the accidents from all causes. In rolling mills 85.6 per cent of the accidents caused temporary disablement and 9.8 per cent caused permanent disablement. Cuts and similar injuries in this branch of the industry caused 24.1 per cent of the accidents from all causes. In the manufacture of engines and boilers and pumps 87.9 per cent of the accidents caused temporary disablement and 10.9 per cent caused permanent disablement. Bruises and similar injuries in this branch of the industry caused 25.3 per cent of the accidents from all causes. In miscellaneous metal industries 79 per cent of the accidents caused temporary disablement and 19.3 per cent caused permanent disablement. Cuts and similar injuries in these branches of the industry caused 22.8 per cent of the accidents from all causes. The details of accident frequency in the metal trades are set forth in tabular form, as follows, but additional data for certain branches of this industry are given in Tables I to IV of the appendix.

(a) The industrial occupation mortality data of the Prudential Insurance Company of America have been made public at different times at international expositions, including Paris in 1900, St. Louis in 1904, and Jamestown Tercentennial in 1907, and they have been discussed in an address on industrial accidents read before the American Association of Medical Examiners, Chicago, 1908.

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NUMBER AND PER CENT OF ACCIDENTS IN ALL METAL INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	1,572	18.6
Burns	573	6.8
Cuts, etc	1,952	23.1
Bruises	1,547	18.3
Sprains and dislocations	304	3.6
Fractures	560	6.6
Other injuries	489	5.8
Total, temporary disablement	6,997	82.8
Permanent disablement:		
Partial or complete loss of eyes	49	.6
Partial or complete loss of limbs	27	.3
Partial or complete loss of hands or feet	53	.6
Internal injuries	30	.3
Other injuries	1,147	13.6
Total, permanent disablement	1,306	15.4
Degree of injury not stated	18	.2
Fatal accidents	135	1.6
Total accidents of all degrees	8,456	100.0

ACCIDENTS IN IRON AND STEEL MANUFACTURE.

More suggestive and conclusive than the statistics for the State of New York are the annual returns of the Cambria Mutual Benefit Association, of Johnstown, Pa., for the period 1893 to 1906. This society includes within its membership employees in most of the important branches of the iron and steel industry and a small proportion of miners. The death rate from all causes has varied from 5.5 to 19 per 1,000, and the accident rate has varied from 1.4 to 11.7 per 1,000. During 1906 the death rate from all causes was 7.6 per 1,000 and from accidents alone 3.5. During the period 1900 to 1906, in the experience of this association there occurred 306 fatal accidents, of which 26.5 per cent were caused by falling articles, 20.3 per cent by persons being run over by railroad cars, locomotives, etc., 13.7 per cent while walking on railroad tracks outside of the works, 9.8 per cent by miscellaneous accidents inside of the works, 7.5 per cent by falls, 5.2 per cent by gas asphyxiation and explosions, 4.6 per cent by miscellaneous accidents outside of the works, 3.6 per cent by burns and scalds, 2.9 per cent by crane accidents, and 1.3 per cent by heat exhaustion. In addition, 3.3 per cent of the accidental deaths so classified were from homicides and 1.3 per cent from suicides. It is made evident by this analysis of the experience of a representative association of iron and steel workers (including some miners) that employees in the iron and steel industry have a true occupation accident risk as the direct result of their employment, which is probably somewhat less than one-half of the recorded accident rate, or about 1.5 per 1,000.

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Some very interesting facts are also brought out by an analysis of the reports of the chief factory inspector of Pennsylvania for the period 1893 to 1902. During this period, among 180,396 persons employed in iron and steel industries and exposed to risk of death one year, there were reported 307 deaths from accident, or at the rate of 1.7 per 1,000 per annum. The rate was 5.4 per 1,000 among nut and bolt makers, 4.3 among persons employed in the manufacture of miscellaneous iron and steel products, 1.9 in the manufacture of nails and spikes, 1.47 in the manufacture of structural iron, 0.82 in the manufacture of locomotives and at railroad repair shops, and 0.84 in the manufacture of ships and engines.

Equally instructive and suggestive is the recorded industrial mortality experience of the Prudential Insurance Company of America during the ten years ending with 1906. There occurred during that period 4,521 deaths of persons employed in all branches of the iron and steel industry, of which 505, or 11.2 per cent, were deaths from accidents. The proportionate mortality was highest during the early ages, or, in detail, 23.2 per cent at ages 15 to 24, 14.6 per cent at ages 25 to 34, and 11.6 per cent at ages 35 to 44. After the age of 44 the percentages were somewhat irregular, having been 8.0 for ages 45 to 54, 8.1 for 55 to 64, 3.3 for 65 to 74, and 2.9 for 75 to 84. The statistical evidence is therefore conclusive that the industrial accident risk in the iron and steel industry at the present time is still a serious one.

The report of the factory inspector of Pennsylvania for 1906, referring briefly to accidents at iron and steel works, states that—

> The reckless manipulation of cranes and hoists; the hasty and faulty hooking up of heavy weights; the slipping of furnaces; the overturning of ladles filled with molten metal; the speeding of engines and cars without light, bell, or flagman through the yards of large establishments thronged with busy workers; the ordering employees to work upon rotten scaffoldings; the employment of foreigners ignorant of our language and habits in dangerous occupations without words of caution and without proper oversight, are crimes against humanity that call for drastic legislation.

ACCIDENTS IN THE CHEMICAL INDUSTRY.

The chemical industry in the United States is gradually assuming very considerable proportions. It is one in which the accident risk is widely differentiated according to the different branches, which include the manufacture of sulphuric, nitric, and other acids, soda, potash, alum, coal tar products, cyanide, wood distillation, bleaching material, dyestuffs, tanning material, paints and varnishes, oils, and compressed and liquified gases. In the chemical industries of New York State during the period 1901 to 1905, there occurred 1,339 accidents, of which 33, or 2.5 per cent, were fatal. Of the total number 91.1 per cent caused temporary disablement

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and 6.3 per cent permanent disablement. The details of accident frequency in this industry are set forth in tabulated form as follows:

NUMBER AND PER CENT OF ACCIDENTS IN CHEMICAL INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	98	7.3
Burns	254	19.0
Cuts, etc	203	15.2
Bruises	385	28.7
Sprains and dislocations	93	6.9
Fractures	87	6.5
Other injuries	100	7.5
Total, temporary disablement	1,220	91.1
Permanent disablement:		
Partial or complete loss of eyes	3	.2
Partial or complete loss of limbs	4	.3
Partial or complete loss of hands or feet	1	.1
Internal injuries	8	.6
Other injuries	69	5.1
Total, permanent disablement	85	6.3
Degree of injury not stated	1	.1
Fatal accidents	33	2.5
Total accidents of all degrees	1,339	100.0

While these statistics are not conclusive, they are the only official data available at the present time. It may, however, be added that according to English mortality returns for the three years ending with 1892, out of 1,159 deaths from all causes among manufacturing chemists 89, or 7.7 per cent, were from accidents; and during the three years ending with 1902, out of 946 deaths from all causes 55, or 5.8 per cent, were from accidents. It is quite probable, however, that the fatal accident risk in the chemical industry is greater in the United States than in England and Wales. The statistics of the factory inspectors show that during the four years ending with 1903 there were reported to certifying surgeons in Great Britain 2,170 accidents in the chemical industry, of which 147, or 6.8 per cent, were fatal. The chemical works in Great Britain are subject to special rules and regulations framed in accordance with the factory acts of 1878 and 1895. The accident risk naturally varies considerably in the different branches, and is a particularly serious one in the manufacture of sulphuric and nitric acids, including the liability to explosion. The risk is still greater in the manufacture of gas for illuminating and industrial purposes. According to returns of British factory inspectors for 1900 to 1903, out of 839 accidents reported to certifying surgeons in connection with the manufacture of gas 115, or 13.7 per cent, proved fatal. More accurate information regarding the accident risk in the manufacture of chemicals and allied products,

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including the manufacture of chemical substances produced by the aid of electricity, would be a useful addition to our present limited knowledge.

ACCIDENTS IN THE MANUFACTURE OF EXPLOSIVES.

One of the most dangerous industries is the manufacture of explosives, including matches. According to the New York State accident statistics for the period 1901 to 1905, out of 99 reported accidents in this industry 14, or 14.1 per cent, proved fatal. Of the total number 72.8 per cent caused temporary disablement and 13.1 per cent permanent disablement. The details of accident frequency and degree of injury in these industries are set forth in tabular form below:

NUMBER AND PER CENT OF ACCIDENTS IN THE MANUFACTURE OF EXPLOSIVES AND MATCHES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	20	20.2
Burns	4	4.1
Cuts, etc	22	22.2
Bruises	15	15.1
Sprains and dislocations	4	4.1
Fractures	3	3.0
Other injuries	4	4.1
Total, temporary disablement	72	72.8
Permanent disablement:		
Internal injuries	1	1.0
Other injuries	12	12.1
Total, permanent disablement	13	13.1
Fatal accidents	14	14.1
Total accidents of all degrees	99	100.0

The manufacture of matches is, of course, much less dangerous than the manufacture of gunpowder, dynamite, and other explosives. The manufacture of matches has been quite fully investigated and reported upon to the secretary of state of the Home Department by British factory inspectors, with special reference to the use of phosphorus in the manufacture of lucifer matches. The term "accident," however, in this connection, is hardly applicable, since phosphorous necrosis may more properly be considered an industrial disease. The report was published in 1899 and includes useful observations on the manufacture of matches in the United States.(a)

The most useful data regarding the risk in the manufacture of explosives are contained in the annual reports of the inspectors of explosives of Great Britain, which extend over a long period of years. During the ten years ending with 1906 there occurred 3,018

[a] See also Oliver, Diseases of Occupation, 1908, p. 35, et seq.

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accidents in the manufacture of explosives, resulting in 3,751 personal injuries, of which 523 were fatal and 3,228 were nonfatal. Of the 523 persons killed 72 were fatally injured in the manufacture of explosives, 31 in the keeping of explosives, 5 in the conveyance of explosives, and 415 in the use of explosives. In the manufacture of gunpowder considered alone there occurred 98 accidents during the ten years ending with 1906, injuring 55 persons, of whom 24, or 43.6 per cent were killed. During the period 1891 to 1900 the rate of fatal accident frequency among persons employed in the manufacture of explosives in Great Britain for which the returns were obtainable was 0.44 per 1,000. The rate of fatal accident frequency in the United States in this industry is probably very much higher, but the present information is not conclusive. The rules and regulations governing the manufacture, storage, and use of explosives in Great Britain are the result of many years of careful and strictly scientific investigation, but regardless of every effort the risk of accidental death and injury in this industry remains a very serious one. Similar rules and regulations in this country would unquestionably serve a decidedly useful and humane purpose.(a)

ACCIDENTS IN THE LUMBER INDUSTRY.

The lumber industry in all its branches gives employment to a very large number of persons exposed to a very considerable risk of both fatal and nonfatal accidents. The principal risk to fatal accidents is in connection with logging and lumbering. For most of the lumbering States no statistical information is available to determine the incidence of accident frequency in the different employments. The most useful data are for the lumber industry of the State of Washington. According to the bureau of labor statistics of that State for the year ending August 1, 1906, among 9,447 men employed there were 1,022 slight accidents, 64 serious accidents, and 15 fatal accidents. (b) In proportion to the number employed the slight accident risk was 108.18 per 1,000, the serious accident risk 6.77 per 1,000, and the fatal accident risk 1.59 per 1,000. The returns for 1906 indicated a slightly less accident liability than during 1905. According to the Second Biennial Report of the Bureau of Labor Statistics of Oregon, there were, from January 1, 1905, to September 30, 1906, in that State 151 accidents reported in sawmills, of which 38, or 25.2 per cent, were fatal; 53, or 35.1 per cent, serious; 35, or 23.2 per cent, severe, and 25, or 16.5 per cent, slight. In logging operations 28 accidents were re-

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[a] See Guide to the Explosives Act, 1875, and to Orders in Council, etc., etc., by Capt. J. H. Thomson, His Majesty's Chief Inspector of Explosives, London, 1905.

[b] A very few of these accidents occurred in other industries less hazardous than lumbering.

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ported for the same period, of which 15, or 53.6 per cent, were fatal; 11, or 39.3 per cent, serious, and 2, or 7.1 per cent severe. In the lumber, sawmill, and planing mill industries of the State of New York, during the five years ending with 1905, there occurred 795 accidents, of which 30, or 3.8 per cent, were fatal. Of the total number of accidents 57.3 per cent caused temporary disablement and 38.6 per cent permanent disablement. The details of accident frequency and degree of injury are set forth in the table below:

NUMBER AND PER CENT OF ACCIDENTS IN THE LUMBER INDUSTRY IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	133	16.7
Burns	18	2.3
Cuts, etc	167	21.0
Bruises	71	8.9
Sprains and dislocations	7	.9
Fractures	40	5.0
Other injuries	20	2.5
Total, temporary disablement	456	57.3
Permanent disablement:		
Partial or complete loss of eyes	2	.3
Partial or complete loss of limbs	13	1.6
Partial or complete loss of hands or feet	21	2.6
Internal injuries	2	.3
Other injuries	269	33.8
Total, permanent disablement	307	38.6
Degree of injury not stated	2	.3
Fatal accidents	30	3.8
Total accidents of all degrees	795	100.0

ACCIDENTS IN SAWMILLS.

While the risk of fatal accidents in sawmills and planing mills is comparatively low, the risk of serious and minor injuries is a very considerable one. The comparatively low ratio of fatal accident liability is more clearly set forth by the official mortality statistics of England and Wales for the three years ending with 1902, which show that out of 1,143 deaths from all causes among sawyers, only 64, or 5.6 per cent, were from accidents. There are no corresponding statistics for the lumber industry as a whole for the United States. The subject of saw accidents has been considered in some detail by Mr. John Calder in a work on "The prevention of factory accidents," in which he states that circular saws annually claim a large number of fingers and portions of hands, as well as some lives, emphasizing the necessity of safeguarding machinery. During 1898, he states, there were recorded in Great Britain under the factory inspection laws 1,144 accidents in connection with circular saws, of which only 5 were fatal. The necessary protective devices are very well illus-

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trated in the treatises referred to, and with reference to American conditions the subject has received some recent consideration in the exhibits of the Museum of Safety Devices of the American Institute of Social Service.

ACCIDENTS IN THE TEXTILE INDUSTRIES.

In the textile industries, as a group, the varieties of employment are so very considerable that the degree of accident liability naturally varies widely with the different branches. Most of the work is, of necessity, carried on indoors, under fairly identical conditions and with about the same class of machinery used for spinning and weaving. That the risk to minor injury is a very serious one is emphasized in a very elaborate report on the prevention of accidents from machinery in the manufacture of cotton, published as a British parliamentary document in 1899. As pointed out by Mr. Arthur Whitlegge, His Majesty's chief inspector of factories, "although the proportion of recorded accidents to the number of persons engaged in this trade is not high in comparison with other industries, the total is sufficiently formidable, and the result of the inquiry is to show that it is capable of much reduction." The report furnishes valuable information to manufacturers and machine makers, suggesting methods and means for the reduction of accidents by the proper guarding of all future installations of cotton-making machinery. According to the report referred to, there occurred during 1898 in British cotton factories 3,214 accidents, of which 35 were fatal. Of the total number of accidents, 2,316 were caused by machinery moved by power. According to the factory inspector's statistics of the State of New York for the five years ending with 1905, out of 3,140 accidents in textile industries, 36, or 1.1 per cent, were fatal. Of the total number of accidents 82.5 per cent caused temporary disablement and 16.2 per cent permanent disablement. The details of accident frequency and degree of injury in this industry are set forth in tabular form below:

NUMBER AND PER CENT OF ACCIDENTS IN TEXTILE INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	667	21.2
Burns	111	3.5
Cuts, etc	819	26.1
Bruises	508	16.2
Sprains and dislocations	124	3.9
Fractures	183	5.8
Other injuries	182	5.8
Total, temporary disablement	2,594	82.

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NUMBER AND PER CENT OF ACCIDENTS IN TEXTILE INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, ETC.—Concluded.

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Permanent disablement:		
Partial or complete loss of eyes	5	.2
Partial or complete loss of limbs	21	.7
Partial or complete loss of hands or feet	29	.9
Internal injuries	11	.4
Other injuries	439	14.0
Total, permanent disablement	505	16.2
Degree of injury not stated	5	.2
Fatal accidents	36	1.1
Total accidents of all degrees	3,140	100.0

TEXTILE ACCIDENTS IN RHODE ISLAND.

There are no similar accident returns in detail for the principal textile centers of the United States. The only useful data are the mortality returns for the State of Rhode Island, but on account of the relatively low proportion of fatal accidents in this industry the mortality data are of less value than they would be otherwise. During the ten years ending with 1906 there occurred in Rhode Island 1,186 deaths of operatives in textile mills, of which 90, or 7.6 per cent, were accidental. The term "operatives" is a very general one and includes weavers and spinners, carders, etc. Among 26 deaths of carders, separately reported, there was 1 accident, or 3.8 per cent of the total mortality from all causes. Among dyers there occurred 79 deaths from all causes, of which 8, or 10.1 per cent, were accidental. According to this return, the fatal accident liability in the textile industry was somewhat greater than generally assumed.(a)

TEXTILE ACCIDENTS IN GREAT BRITAIN.

The corresponding reports of British factory inspectors contain much more interesting and useful information. During the five years ending with 1904, out of all accidents reported for textile industries 1.6 per cent were fatal, against 3.9 per cent for nontextile industries, including laundries, docks and wharves, warehouses, and building construction. Grouped according to the degree of injury, the reports for the four years ending with 1903 furnish the details of 18,828 accidents reported as having occurred in textile manufactories and of 98,728 accidents reported as having occurred in nontextile industries.

[a] An interesting statistical analysis of 1,000 accidents in a representative cotton mill is contained in the special report on dangerous occupations of the Massachusetts State Board of Health, Boston, 1907, pp. 29 et seq.

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NUMBER AND PER CENT OF ACCIDENTS IN TEXTILE AND IN NONTEXTILE INDUSTRIES IN THE UNITED KINGDOM, BY DEGREE OF INJURY, FOR THE PERIOD 1900 TO 1903.

[Compiled from the Annual Reports of the Chief Inspector of Factories and Workshops of the United Kingdom, 1900 to 1903.]

Degree of accidental injury.	Textile industries.		Nontextile industries.	
	Number of accidents.	Per cent of total.	Number of accidents.	Per cent of total.
Fatal accidents	288	1.5	3,949	4.0
Nonfatal accidents:				
Loss of right hand or arm	80	.4	266	.3
Loss of left hand or arm	57	.3	218	.2
Loss of part of right hand	1,204	6.4	4,874	4.9
Loss of part of left hand	909	4.8	4,824	4.9
Loss of any part of leg or foot	28	.2	433	.4
Fracture of limbs or bones of trunk	672	3.6	2,644	2.7
Fracture of hand or foot	550	2.9	1,985	2.0
Loss of sight of one or both eyes	43	.2	201	.2
Injuries to head and face	1,543	8.2	7,936	8.0
Burns and scalds	461	2.5	13,459	13.7
Lacerations, contusions, etc	12,993	69.0	57,939	58.7
Total nonfatal accidents	18,540	98.5	94,779	96.0
Total fatal and nonfatal accidents	18,828	100.0	98,728	100.0

The table is a very suggestive one, but for a further understanding of the conditions injurious to life and health in this industry a much more extended analysis of the data is required. It is particularly evident in the case of this industry that material differences in the methods of reporting nonfatal accidents must seriously impair the value of conclusions, and extreme caution, therefore, is necessary in the use of any statistical data, official or otherwise, upon this subject.

ACCIDENTS IN ELECTRICAL INDUSTRIES.

The electrical industries of the United States have made such extraordinary progress during recent years that central electric light and power stations alone in 1902 gave employment to 6,996 salaried officials and clerks and 23,330 wage-earners, all more or less exposed to the risk of accidental death and injury as the result of direct or alternating electrical currents. The accident risk varies naturally very considerably according to occupations, the most important of which are those of foremen, inspectors, engineers, firemen, dynamo and switchboard men, linemen, mechanics, and lamp trimmers. A large amount of useful information regarding central light and power stations has been published in the form of a special report by the Bureau of the Census in 1905. The accident statistics for the State of New York for the five years ending with 1905 return 1,923 recorded casualties, of which only 16, or 0.8 per cent, were fatal. Of the total number of accidents 82.3 per cent caused temporary disablement and 16.8 per cent permanent disablement. Detail-
accident frequency and degree of injury in this industr
in the following table.

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NUMBER AND PER CENT OF ACCIDENTS IN ELECTRICAL INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	347	18.0
Burns	210	10.9
Cuts, etc	409	21.3
Bruises	328	17.1
Sprains and dislocations	60	3.1
Fractures	86	4.5
Other injuries	143	7.4
Total, temporary disablement	1,583	82.3
Permanent disablement:		
Partial or complete loss of eyes	7	.4
Partial or complete loss of limbs	4	.2
Partial or complete loss of hands or feet	10	.5
Internal injuries	7	.4
Other injuries	294	15.3
Total, permanent disablement	322	16.8
Degree of injury not stated	2	.1
Fatal accidents	16	.8
Total accidents of all degrees	1,923	100.0

ACCIDENT LIABILITY OF ELECTRICIANS AND LINEMEN.

These statistics, however, have only a very limited bearing upon the electrical industry as a whole, pertaining, as they probably do, chiefly to the manufacture of electrical machinery, apparatus, and supplies, rather than to exposure in electric light and power stations. In the manufacture of electrical machinery, etc., more than 60,000 wage-earners are employed, and in addition more than 10,000 salaried officials, clerks, etc., who, however, are much less seriously exposed to the danger of electrical accident than men in responsible positions in central light and power plants. The statistics also have no reference to the accident liability of men employed on electric railways. The Prudential Insurance Company of America, at the Jamestown Exposition, exhibited the results of its industrial mortality experience for the period of 1897 to 1906 for certain well-defined groups of persons employed in the electrical industry. According to this experience, out of 645 deaths of electricians, 95, or 14.7 per cent, were from accidents, but the proportionate mortality was highest at ages 25 to 34, when 19.1 per cent of the deaths from all causes were from accidents, decreasing to 15.4 per cent at ages 25 to 34, to 11 per cent at ages 35 to 44, and to 7.8 per cent at ages 45 to 54. Among electric linemen there occurred 240 deaths during the period mentioned, of which 112, or 46.7 per cent, were from accidents. At ages 15 to 24 the proportionate mortality from accidents was 55.3 per cent of the mortality from all causes, increasing to 56.8 per cent at ages 25 to 34, and decreasing to 38.2 per cent at ages 35 to 44, and to 30 per cent at ages 45 to 54. Somewhat similar are the results of the analysis of the

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mortality data for Rhode Island for the ten years ending with 1906, during which period there were recorded in that State 35 deaths of electricians, of which 6, or 17.1 per cent, were from accidents, while there occurred 13 deaths among linemen, of which 9, or 69.2 per cent, were from accidents.

The details of the published insurance mortality experience with this class of labor are set forth in the following two tables, which show the number of deaths from all causes at each period of life and the number of deaths from accidents and the resulting percentage of accident frequency at each decennial group of ages or the proportionate accident mortality as determined by this method.

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG ELECTRICIANS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	199	38	19.1
25 to 34 years	240	37	15.4
35 to 44 years	127	14	11.0
45 to 54 years	64	5	7.8
55 to 64 years	12	1	8.3
65 years or over	3	.....	.....
Total	645	95	14.7

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG ELECTRIC LINEMEN, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	47	26	55.3
25 to 34 years	95	54	56.8
35 to 44 years	68	26	38.2
45 to 54 years	20	6	30.0
55 to 64 years	8	.....	.....
65 years or over	2	.....	.....
Total	240	112	46.7

ELECTRICAL ACCIDENTS IN GREAT BRITAIN.

In Great Britain during the four years ending with 1903 there were recorded 174 electrical accidents, of which 37, or 21.3 per cent, were fatal. The subject of electrical accident risk has been discussed at considerable length in Oliver's Dangerous Trades, in a separate chapter on electrical generating works, in which reference is made to a parliamentary report of 1897 of a departmental committee on elec-

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trical generating works, which contains a large amount of extremely useful and suggestive information. Much useful information is also contained in the annual reports of the Massachusetts Gas and Electric Light Commission. The subject is also discussed at some length in Calder's treatise on "The Prevention of Factory Accidents," from which are briefly quoted the following remarks:

The special risk from electric shock in connection with the generation and distribution of electricity in factories, workshops, and other premises is one which has increased with the progress in the use of high pressure. A dangerous and possibly fatal shock may be sustained by contact between two portions of the human body or even clothing and two conductors differing in pressure by 700 to 1,200 volts, according to the perfection of the contact. An insulated person safely touching highly charged metal and at the same time passing any conductor to another uninsulated person, or even touching the latter or an earthed conductor, may cause a fatal or severe shock. The metal of the dynamos, the switchboard and connections, the high pressure mains, transformers, and series arc lamps is material from the touching of which under the above conditions dangerous shock would result. The ordinary fencing may be relied upon for protecting moving parts of electrical generating machinery in the case of direct currents below a voltage of 700 and of alternate currents less than 350 volts pressure. All installations with higher voltages should be regarded as high pressure, and the following extra precautions should be adopted in view of the risk from shock.(a)

There are few employments which require more serious attention to the risk of accidental injuries than the electrical industries, and as emphasized by the statistics previously quoted, the risk is particularly great in the employment of linemen, where, however, the electrical hazard is increased by the liability to serious falls in the climbing of poles and connecting of wires while at a considerable height above the ground.

ACCIDENTS IN MINES AND QUARRIES.

The accident risk in mines and quarries is a widely distributed one throughout the United States, and every branch of the industry would require special consideration to properly emphasize the specific occupation hazard. There were in 1902, according to the census, 151,516 mines in the United States, giving employment to 581,728 wage-earners and 38,128 salaried officials, clerks, etc.

ACCIDENTS IN COAL MINING.

The most important branch of the industry is coal mining, which during 1902 employed 350,329 wage-earners. The broad division in coal mining is between anthracite and bituminous. The anthracite beds are practically limited to Pennsylvania, while bituminous coal is mined in a large number of States, including the Pacific coast States

(a) The Prevention of Factory Accidents, by John Calder, p. 114.

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and the Territory of Alaska. During the ten years ending with 1906 there occurred in the anthracite regions of Pennsylvania 4,833 fatal accidents and 11,084 nonfatal injuries. The fatal accident liability in anthracite mining in proportion to the number employed was 3.18 per 1,000 and 7.29 per 1,000 for nonfatal injuries. In the bituminous coal fields of Pennsylvania there occurred during the ten years ending with 1906 3,522 fatal accidents and 7,671 nonfatal injuries. In proportion to the number employed the fatal accident rate was 2.77 and the nonfatal accident rate 6.03 per 1,000. The accident liability, both fatal and nonfatal, was, therefore, somewhat greater in the anthracite coal fields than in the bituminous, but the differences are not as great as generally assumed. A more marked difference appears when the accident liability in the soft-coal regions of Pennsylvania is compared with that in the soft-coal regions of certain other States. In Illinois, in the ten years ending with 1906, the fatal accident rate was 2.57 and the nonfatal accident rate 10.67 per 1,000, while in the State of Missouri during the same period the fatal accident rate was only 1.39 and the nonfatal accident rate 2.65 per 1,000. The accident risk in soft-coal mining is very much greater in the far western States, and, for illustration, in the State of Colorado during the ten years ending with 1906 the fatal accident rate in coal mining was 5.87 per 1,000 and the nonfatal rate was 10.74.(a) The details of coal mining accidents in the anthracite fields of Pennsylvania are shown here, but additional tables for other States are given in the statistical appendix.

NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN THE ANTHRACITE COAL MINES OF PENNSYLVANIA, BY YEARS, 1897 TO 1906.

[Compiled from the Annual Reports of the Pennsylvania Department of Mines.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	149,557	423	2.83	1,106	7.40
1898	142,420	411	2.89	1,134	7.96
1899	140,583	461	3.28	1,030	7.33
1900	143,826	411	2.86	1,057	7.35
1901	147,651	513	3.47	1,243	8.42
1902	148,141	300	2.03	641	4.33
1903	151,827	518	3.41	1,325	8.73
1904	161,330	595	3.69	1,047	6.49
1905	168,254	644	3.83	1,289	7.66
1906	166,175	557	3.35	1,212	7.29
Total, 5 years, 1897 to 1901	724,037	2,219	3.06	5,570	7.69
Total, 5 years, 1902 to 1906	795,727	2,614	3.29	5,514	6.93
Total, 10 years, 1897 to 1906	1,519,764	4,833	3.18	11,084	7.29

(a) For a further discussion of coal mining accidents by the writer, see articles in the Mineral Industry, volume 6, New York, 1897, and in the Engineering and Mining Journal for January 27, 1900; November 24, 1900; August 10, 1901; October 25, 1902; September 5 and 26, 1903; December 22, 1904; December 2, 1905; December 22, 1906, and January 4, 1908. For a discussion of the conditions of labor and life in anthracite mining by the writer, see the Engineering and Mining Journal for November 22 and 29 and December 13 and 20, 1902.

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NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN THE BITUMINOUS COAL MINES OF PENNSYLVANIA, BY YEARS, 1897 TO 1906.

[Compiled from the Annual Reports of the Pennsylvania Department of Mines. The figures for each year are as shown in the report for that particular year.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1 000 employees.	Number.	Rate per 1,000 employees.
1897	86,554	150	1.73	426	4.92
1898	87,802	198	2.28	458	5.22
1899	91,440	258	2.82	487	5.33
1900	109,018	265	2.44	584	5.36
1901	117,602	301	2.56	656	5.58
1902	135,386	456	3.36	861	6.36
1903	151,745	402	2.65	1,046	6.89
1904	155,747	536	3.44	917	5.89
1905	164,941	479	2.90	1,076	6.52
1906	172,928	477	2.76	1,160	6.71
Total, 5 years, 1897 to 1901	492,416	1,172	2.39	2,611	5.30
Total, 5 years, 1902 to 1906	780,747	2,350	3.01	5,060	6.48
Total, 10 years, 1897 to 1906	1,273,163	3,522	2.77	7,671	6.03

ACCIDENTS IN IRON MINING.

In metal mining the most important branch is iron-ore mining in the Lake Superior region. The mining of iron ore in the aggregate gives employment to about 40,000 wage-earners. The most trustworthy data are for Dickinson and Marquette counties, Mich. During the ten years ending with 1906 the fatal accident rate in the iron mines of Dickinson County was 4.23 per 1,000, while the nonfatal accident rate was 3.80. But the term "accident" in this case is limited to serious injuries. The accident rate has varied considerably from year to year, having been as high as 7.79 per 1,000 in 1901 and as low as 2.54 per 1,000 in 1902. The fatality rate of persons employed inside of the mines during the ten-year period was 4.95 per 1,000, while the fatality rate outside of the mines was 2.53 per 1,000. In Marquette County during the same period the fatal accident rate was 4.31 per 1,000, having been as high as 5.58 in 1901, and as low as 3.62 in 1900.

The details of the accident frequency during each of the years of the ten-year period are given in the following table. An additional table showing the frequency of inside and outside accidents in the mines of Dickinson County is given in the appendix, Table VIII.

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NUMBER OF FATAL AND OF SERIOUS NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN IRON-ORE MINES OF DICKINSON COUNTY, MICH., BY YEARS, 1897 TO 1906.

Year.	Number of employees.	Fatal accidents.		Serious nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	2,161	10	4.63	7	3.24
1898	2,470	11	4.45	17	6.88
1899	2,873	9	3.13	16	5.57
1900	3,213	19	5.91	12	3.73
1901	3,467	27	7.79	7	2.02
1902	3,943	10	2.54	17	4.31
1903	4,004	16	4.00	14	3.50
1904	3,048	9	2.95	11	3.61
1905	3,212	9	2.80	8	2.49
1906	3,499	15	4.30	12	3.44
Total, 5 years, 1897 to 1901	14,184	76	5.36	59	4.16
Total, 5 years, 1902 to 1906	17,696	59	3.33	62	3.50
Total, 10 years, 1897 to 1906	31,880	135	4.23	121	3.80

NUMBER OF FATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN IRON-ORE MINES OF MARQUETTE COUNTY, MICH., BY YEARS, 1897 TO 1906.

Year.	Number of employees.	Fatal accidents.	
		Number.	Rate per 1,000 employees.
1897	4,153	17	4.09
1898	4,389	19	4.33
1899	5,555	26	4.60
1900	6,627	24	3.62
1901	5,200	29	5.58
1902	5,518	29	5.26
1903	6,000	23	3.83
1904	4,024	15	3.73
1905	5,060	22	4.35
1906	5,840	22	3.77
Total, 5 years, 1897 to 1901	26,024	115	4.42
Total, 5 years, 1902 to 1906	26,442	111	4.20
Total, 10 years, 1897 to 1906	52,466	226	4.31

ACCIDENTS IN LEAD AND ZINC MINING.

The mining of lead and zinc is chiefly concentrated in Missouri. The returns for the metalliferous mines of that State may, therefore, be accepted as representative of this industry. During the ten-year period ended with 1906 the fatal accident rate in Missouri lead and zinc mines was 3.01 per 1,000 and the nonfatal accident rate 1.69. The fatal accident rate has varied considerably from year to year, having been as high as 4.49 per 1,000 in 1900, and as low as 1.23 per 1,000 in 1902. The mining of lead and zinc ores as a separate industry gives employment to about 8,000 (a) wage-earners throughout the United States. The details of accident frequency in the lead and zinc mines of Missouri, including the mills, are set forth in the following table.

a 7,881, according to Census Report on Mines and Quarries, 1902, p. 445.

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NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN LEAD AND ZINC MINES OF MISSOURI (INCLUDING THE MILLS), BY YEARS, 1897 TO 1906.

[Compiled from the Annual Reports of the Missouri Bureau of Mines and Mine Inspection.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	6,364	16	2.51	5	0.79
1898	7,609	29	3.81	16	2.10
1899	10,997	27	2.46	19	1.73
1900	11,553	52	4.49	27	2.33
1901	10,989	41	3.73	24	2.18
1902	11,358	14	1.23	23	2.03
1903	12,405	17	1.37	21	1.69
1904	13,608	30	2.20	8	.59
1905	12,456	49	3.93	13	1.04
1906	13,243	58	4.38	31	2.34
Total, 5 years, 1897 to 1901	47,542	165	3.47	91	1.91
Total, 5 years, 1902 to 1906	63,070	168	2.66	96	1.52
Total, 10 years, 1897 to 1906	110,612	333	3.01	187	1.69

ACCIDENTS IN COPPER MINING.

Copper mining gives employment to about 26,000 wage-earners, chiefly in the State of Montana, the Lake Superior region, and in Arizona. The most trustworthy data regarding the accident liability in copper mines are for Houghton County, Mich., for the ten years ending with 1903. The data are limited to fatal accidents, apparently no returns being required for nonfatal injuries. The recorded fatal accident rate was 2.80 per 1,000 for the ten-year period, having been as high as 6.35 per 1,000 in 1895, and as low as 2.07 per 1,000 in 1899. The details of fatal accident frequency in the copper mines of Houghton County, Mich., are set forth in the table below:

NUMBER OF FATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN COPPER MINES OF HOUGHTON COUNTY, MICH., BY YEARS, 1894 TO 1903.

[Figures for 1894 to 1902 from Twenty-first Annual Report of the Michigan Bureau of Labor, p. 119; figures for 1903 from the Engineering and Mining Journal.]

Year.	Number of employees.	Fatal accidents.	
		Number.	Rate per 1,000 employees.
1894	7,348	22	2.99
1895	7,249	46	6.35
1896	8,170	19	2.33
1897	8,726	26	2.98
1898	10,469	23	2.20
1899	13,051	27	2.07
1900	13,971	36	2.58
1901	13,498	33	2.44
1902	14,130	44	3.11
1903	13,629	33	2.42
Total, 5 years, 1894 to 1898	41,962	136	3.24
Total, 5 years, 1899 to 1903	68,279	173	2.53
Total, 10 years, 1894 to 1903	110,241	309	2.80

Since copper mining in Montana constitutes the predominating branch of the mining industry in that State, the accident returns for

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metal mines generally are fairly representative of the copper mining industry, and they may be briefly referred to in connection with the present discussion. During the ten years ending with 1906 the fatal accident rate in Montana metal mines was 3.48 per 1,000, having been as high as 5.29 in 1897 and as low as 2.75 in 1903. The nonfatal accident liability was 2.91 per 1,000 during the ten-year period, having been as high as 3.80 in 1904 and as low as 1.79 in 1899. It is apparent, however, from the returns that the more serious accidents only are required to be reported. The details of accident frequency in metal mining in Montana are given in the appendix.

ACCIDENTS IN GOLD AND SILVER MINING.

For gold and silver mines no statistical data are available, except the returns for the metalliferous mines and smelters of Colorado. The gold and silver mines constitute nearly the whole of metal mining in Colorado, and the returns may, therefore, be accepted as representative of the gold and silver mining industry in that State. The fatality rate in Colorado metal mines during the ten years ending with 1906 was 2.85 per 1,000, the rate having been as high as 3.77 per 1,000 in 1897 and as low as 2.08 in 1903. The nonfatal accident rate was 12.96 per 1,000 during the ten-year period, having been as high as 16.99 in 1901 and as low as 5.78 in 1897. Evidently nonfatal accidents in Colorado include minor injuries, which apparently are not reported in Montana. During 1906 the fatal accident rate in the gold mines of New South Wales was 0.45 per 1,000, of Queensland 1.52, of Western Australia 2.35, and in the Transvaal 5.40. In 1905 the rate for the Transvaal was 5.36 per 1,000. The details of accident frequency in the metal mining industry of Colorado are given in the table below:

NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN GOLD, SILVER, AND LEAD MINES OF COLORADO, BY YEARS, 1897 TO 1906.

[From the Biennial Reports of the State Bureau of Mines of Colorado.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	29,215	110	3.77	169	5.78
1898	30,231	108	3.57	184	6.09
1899	39,210	103	2.63	481	12.27
1900	40,111	107	2.67	526	13.11
1901	37,260	121	3.25	633	16.99
1902	35,118	82	2.33	561	15.97
1903	32,267	67	2.08	494	15.31
1904	35,376	101	2.86	539	15.24
1905	34,278	109	3.18	486	14.18
1906	34,790	82	2.36	436	12.53
Total, 5 years, 1897 to 1901	176,027	549	3.12	1,993	11.32
Total, 5 years, 1902 to 1906	171,829	441	2.57	2,516	14.64
Total, 10 years, 1897 to 1906	347,856	990	2.85	4,509	12.96

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ELECTRICAL RISK IN MINING.

It is evident that the risk to life and the liability to injury in all branches of mining in the United States is very serious, and apparently the tendency is toward an increase in the risk. One of the most important factors of recent years contributing toward an increase in the accident liability is the increasing use of electricity in mines, chiefly for the operation of coal-cutting machinery. There is a brief discussion of this subject in a special report of the Bureau of the Census,(a) on mines and quarries, while a more extended consideration is presented in the Report of the Departmental Committee on the Use of Electricity in Mines, published as a British parliamentary document in 1904. The subject is also referred to officially and at length, with extensive statistical illustrations, in the various reports of the mine inspectors of the different States. It requires no very extended investigation to make it clear that the mining industry at the present time is subject to a much higher accident liability than appears necessary in the light of recent and thoroughly scientific investigations into the causes of such accidents and the conditions responsible for their occurrence. On the other hand, a part of the increase in the risk is the result of the increasing depth of mines and the increasing employment of a low grade of foreign, non-English-speaking labor.(b)

ACCIDENTS IN SMELTING AND REFINING.

The frequency of industrial accidents in the recovery of precious metals by the cyanide and other processes, as well as the risk of employment in smelting and refining generally, is a separate subject for the discussion of which there are not as yet any very trustworthy statistical data for the United States, although some useful information is available for certain foreign countries. The most serious risk is the liability to lead and other forms of industrial metallic poisoning, but these are generally classified as industrial or occupation diseases rather than as industrial accidents. Regarding the risk of industrial poisoning the works of Arlidge and Oliver should be consulted, but it would appear to be fairly well established that lead and other forms of industrial poisoning are not as common in the United States as in England and on the Continent.

ACCIDENTS IN THE MINERAL OIL INDUSTRY.

Another branch of the mining industry is the prospecting and drilling for petroleum and the operation of oil wells and pipe lines, including refineries, for which as yet there are no very satisfactory

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a Special Report on Mines and Quarries, Bureau of the Census, 1905, p. 145.

b For a further discussion of accidents in metal mining by the writer, see the issues of the Engineering and Mining Journal for January 14 and 21, 1904.

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statistics. From such information, however, as is available the accident risk would appear to be much greater in the Louisiana-Texas oil fields and in those of southern California than in the oil fields of Pennsylvania, West Virginia, Ohio, or Indiana. The accident risk in connection with oil well drilling and operating is briefly indicated in the following quotation from a report on the oil fields of the Louisiana-Texas Gulf Coastal Plain, published by the United States Geological Survey in 1903:

Considerable danger accompanies the flowing and closing of a new well on account of the poisonous nature of the gas accompanying the oil flow. This gas contains a large proportion of hydrogen sulphide, and its poisonous qualities are intensified by its being saturated with petroleum vapor. Petroleum vapor has the effect of rendering persons inhaling it unconscious, and if one remains under its influence for any length of time death ensues. The combination of the hydrogen sulphide and petroleum vapor issuing from the wells is such as to render death almost instantaneous.(a)

The petroleum industry is constantly increasing in importance, and in 1902 there were 118,671 wells, giving employment to 17,552 wage-earners.(b) The principal risk appears to be in connection with derrick construction, where there is a serious liability to falls, but the statistical data regarding this occupation are fragmentary and inconclusive.

ACCIDENTS IN QUARRIES.

Quarrying is a very dangerous industry, which, according to the Census of 1902, gives employment to 71,156 wage-earners.(c) The accident liability varies somewhat, but in general quarrying the risk is about the same, whether it be the quarrying of limestone, granite, marble, sandstone, etc. The accident liability varies also, according to the character of the strata and the depth of the quarries as well as the methods used in quarrying, which, of course, includes the extensive handling and use of explosives. The only conclusive available data regarding the fatal accident liability of quarrymen in the United States are derived from the mortality experience of the industrial insurance company previously referred to, and which includes the ten years ending with 1906. In this experience there occurred 198 deaths, of which 52, or 26.3 per cent, were due to accident. The proportionate mortality varied considerably according to age, having been 77.8 per cent at ages 15 to 24, 45.5 per cent at ages

[a] Bulletin 212, U. S. Geological Survey, 1903, p. 170.

[b] Special Report of the Bureau of the Census on Mines and Quarries, 1902, p. 721.

[c] Special Report of the Bureau of the Census on Mines and Quarries, 1902, p. 785.

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25 to 34, 32.4 per cent at ages 35 to 44, 28.6 per cent at ages 45 to 54, 18.6 per cent at ages 55 to 64, and 12.5 per cent at ages 65 to 75. The details of this mortality experience are set forth in the following table, which shows by periods of life the proportionate mortality from accidents in the mortality from all causes:

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG QUARRYMEN, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	9	7	77.8
25 to 34 years	11	5	45.5
35 to 44 years	34	11	32.4
45 to 54 years	49	14	28.6
55 to 64 years	59	11	18.6
65 years or over	36	4	11.1
Total	198	52	26.3

The subject of accidents to quarrymen is discussed in some detail in Dangerous Trades, by Oliver, who very fully considers the varieties of quarries, the methods of working, the character of accidents and their causes, including the liability to injuries to the eyes, which are often of serious consequence.(a) In England the working of quarries is under strict supervision and controlled by legal enactments, which are fully set forth in the different quarries acts of 1887, 1894, and other years. The general fatal accident rate in the quarries of the United Kingdom in 1906 was 1.06 per 1,000.(b) In France, during 1906, the fatality rate in quarries was 0.92, in Germany 1.47, and in Italy 1.05 per 1,000. The accident liability in this occupation is further emphasized by English mortality statistics, according to which, out of 2,839 deaths during the three years ending with 1902, 259, or 9.12 per cent, were from accidents.

ACCIDENTS IN TRANSPORTATION BY RAIL.

The accident liability in the railway service constitutes in the aggregate a most serious risk to the life, health, and well-being of both employees and passengers. Out of 658,105 deaths from all causes reported in the registration area of the United States during 1906, rail-

[a] Dangerous Trades, pp. 560, 561.

[b] For additional statistics of accidents in quarries in the United Kingdom, see Tables X and XI of the appendix.

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road accidents and injuries caused 7,090 deaths, while in addition there were 1,488 deaths caused by street car accidents. The corresponding number of accidental deaths, more or less the result of industrial activity, were 1,523 deaths resulting from injuries in mines and quarries, 565 deaths resulting from injuries by machinery, 1,524 deaths resulting from injuries by vehicles and horses, and 183 deaths resulting from automobile accidents.(a) According to the returns for 1906 of the Interstate Commerce Commission, 3,929 railroad employees were killed as the result of railroad accidents and 76,701 were injured.(b)

ACCIDENT LIABILITY OF RAILWAY TRAINMEN.

The most important group of railway employees is trainmen, which during 1906, numbered nearly 300,000. Among this number there occurred 2,310 deaths caused by railroad casualties, or 8.09 per 1,000, while, in addition, there occurred 34,989 injuries, or at the rate of 122.53 per 1,000. The fatality rate during the last five years was 7.91, against 6.81 per 1,000 during the preceding quinquennial period. The rate of injuries other than fatal was 110.07 per 1,000 during the last five years, against 88.22 during the preceding five-year period.

The details of accident frequency by single years are given in the following table derived from the statistical reports of the Interstate Commerce Commission.

NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES AMONG RAILWAY TRAINMEN IN THE UNITED STATES, BY YEARS, 1897 TO 1906.

[Compiled from annual reports of the Interstate Commerce Commission on Statistics of Railways in the United States.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	161,397	976	6.05	13,795	85.47
1898	170,708	1,141	6.68	15,645	91.65
1899	178,851	1,155	6.46	16,663	93.17
1900	191,198	1,396	7.30	17,571	91.90
1901	209,043	1,537	7.35	16,715	79.96
1902	225,422	1,674	7.43	21,503	95.39
1903	253,660	2,070	8.16	25,676	101.22
1904	253,834	2,114	8.33	29,275	115.33
1905	265,175	1,990	7.50	29,853	112.58
1906	285,556	2,310	8.09	34,989	122.53
Total, 5 years, 1897 to 1901	911,197	6,205	6.81	80,389	88.22
Total, 5 years, 1902 to 1906	1,283,647	10,158	7.91	141,296	110.07
Total, 10 years, 1897 to 1906	2,194,844	16,363	7.46	221,685	101.00

[a] Mortality Statistics, 1906, United States Bureau of the Census, p. 86.

[b] Statistics of Railways in the United States, Interstate Commerce Commission, 1906, p. 109.

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ACCIDENT LIABILITY OF SWITCH TENDERS AND FLAGMEN.

The next most important group of railroad employees is switch tenders, crossing tenders, and watchmen. The number of men in this employment during 1906 was nearly 50,000. The fatal accident rate for the group was 2.96 per 1,000, and the nonfatal accident rate 20.66. The fatality rate during the last five years was 4.11 against 4.89 during the preceding five years. The injury rate was 32.14 against 51.87. The improvement in the accident rate in this occupation is chiefly the result of improved grade crossings, the introduction of a more satisfactory signal system, the operation of switches and gates from signal towers, and other improvements along these lines. The details of accident frequency by single years are set forth in the next table.

NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES AMONG RAILWAY SWITCH TENDERS, CROSSING TENDERS, AND WATCHMEN IN THE UNITED STATES, BY YEARS, 1897 TO 1906.

[Compiled from annual reports of the Interstate Commerce Commission on Statistics of Railways in the United States.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	43,768	201	4.59	2,423	55.36
1898	47,124	242	5.14	2,677	56.81
1899	48,686	273	5.61	2,992	61.46
1900	50,789	272	5.36	3,060	60.25
1901	47,576	175	3.68	1,190	25.01
1902	50,489	200	3.96	1,443	28.58
1903	49,961	283	5.66	2,352	47.08
1904	46,262	229	4.96	2,070	44.75
1905	45,532	136	2.99	883	19.39
1906	49,659	147	2.96	1,026	20.66
Total, 5 years, 1897 to 1901	237,943	1,163	4.89	12,342	51.87
Total, 5 years, 1902 to 1906	241,903	995	4.11	7,774	32.14
Total, 10 years, 1897 to 1906	479,846	2,158	4.50	20,116	41.92

ACCIDENT LIABILITY OF RAILWAY MAIL CLERKS.

A very important though not very numerous group of employees in the railway service is railway mail clerks. During the year 1906 the number employed in this occupation was 13,317. There occurred among this group 16 deaths, or 1.20 per 1,000, and 77 injuries, or 5.78 per 1,000. The fatality rates have fluctuated considerably during the past ten years, having been as high as 1.85 per 1,000 in 1897 and as low as 0.46 per 1,000 in 1900. During the last five years the average fatality rate was 1.29 per 1,000, against 0.91 per 1,000 during the preceding five years. The rate of injuries has also increased from 5.69 per 1,000 during the first five years to 8.11 per 1,000 during the last five years of

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the decade ending with 1906. The details of accident frequency by single years in this occupation are given in the table below:

NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES AMONG RAILWAY MAIL CLERKS IN THE UNITED STATES, BY YEARS, 1897 TO 1906.

[Compiled from the annual reports of the General Superintendent of the Railway Mail Service.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	7,573	14	1.85	33	4.36
1898	7,999	7	.88	34	4.25
1899	8,388	6	.72	50	5.96
1900	8,695	4	.46	57	6.56
1901	8,978	7	.78	63	7.02
1902	9,485	9	.95	88	9.28
1903	10,262	18	1.75	78	7.60
1904	11,270	18	1.60	90	7.99
1905	12,110	12	.99	125	10.32
1906	13,317	16	1.20	77	5.78
Total, 5 years, 1897 to 1901	41,633	38	.91	237	5.69
Total, 5 years, 1902 to 1906	56,444	73	1.29	458	8.11
Total, 10 years, 1897 to 1906	98,077	111	1.13	695	7.09

SPECIFIC ACCIDENT LIABILITY IN RAILWAY SERVICE.

The groups of railway employees, as defined by the Interstate Commerce Commission, are much too large to warrant safe conclusions regarding the accident risk in the more important specified occupations. The industrial mortality statistics of the Prudential Insurance Company, as exhibited at the St. Louis and Jamestown expositions, are for the time being more useful for practical purposes and are more conclusive. Out of 171 deaths of railway conductors during the ten years ending with 1906, 50, or 29.2 per cent, were from accidents. The proportionate mortality from accidents in this occupation at ages 15 to 24 was 50.0 per cent, at ages 25 to 34 it was 42.9 per cent, at ages 35 to 44 it was 31.0 per cent, at ages 45 to 54 it was 22.7 per cent, and at ages 55 to 64 it was 17.6 per cent. Among railway engineers there occurred 142 deaths, of which 42, or 29.6 per cent, were from accidents. The proportionate mortality was 40.0 per cent at ages 15 to 24, 61.9 per cent at ages 25 to 34, 37.9 per cent at ages 35 to 44, 25.0 per cent at ages 45 to 54, 19.5 per cent at ages 55 to 64, and 6.7 per cent at ages 65 to 74. There occurred 207 deaths of railway firemen, of which 111, or 53.6 per cent, were from accidents. The proportionate mortality was 64.8 per cent at ages 15 to 24, 58.9 per cent at ages 25 to 34, 43.5 per cent at ages 35 to 44, a[illegible] cent at ages 45 to 54. Above this age the numbers are to[illegible] safe generalization. Among railway brakemen, both [illegible]

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freight, there occurred 917 deaths, of which 630, or 68.7 per cent, were from accidents. The proportionate mortality was 83.4 per cent at ages 15 to 24, 69.6 per cent at ages 25 to 34, 52.7 per cent at ages 35 to 44, 48.1 per cent at ages 45 to 54, and 29.6 per cent at ages 55 to 64. Among railway flagmen and switchmen there occurred 704 deaths, of which 208, or 29.5 per cent, were from accidents. The proportionate mortality was 61.5 per cent at ages 15 to 24, 50 per cent at ages 25 to 34, 34.9 per cent at ages 35 to 44, 25.5 per cent at ages 45 to 54, 20.6 per cent at ages 55 to 64, 14.1 per cent at ages 65 to 74, and 6.7 per cent at ages 75 to 84. There occurred 216 deaths of railway gatemen, of which 33, or 15.3 per cent, were from accidents. The proportionate mortality was 11.1 per cent at ages 25 to 34, 12.0 per cent at ages 35 to 44, 24.1 per cent at ages 45 to 54, 19.7 per cent at ages 55 to 64, and 12.5 per cent at ages 65 to 74. Among railway freight handlers there occurred 193 deaths, of which 30, or 15.5 per cent, were from accidents. The details of the accident mortality of conductors, engineers, and firemen are given below, but additional data for other occupations in the railway service are given in the appendix, Tables XII to XV.

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RAILWAY CONDUCTORS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	6	3	50.0
25 to 34 years	49	21	42.9
35 to 44 years	42	13	31.0
45 to 54 years	44	10	22.7
55 to 64 years	17	3	17.6
65 years or over	13	.....	.....
Total	171	50	29.2

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RAILWAY ENGINEERS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	5	2	40.0
25 to 34 years	21	13	61.9
35 to 44 years	29	11	37.9
45 to 54 years	28	7	25.0
55 to 64 years	41	8	19.5
65 years or over	18	1	5.6
Total	142	42	29.6

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NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RAILWAY FIREMEN, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	71	46	64.8
25 to 34 years	90	53	58.9
35 to 44 years	23	10	43.5
45 to 54 years	14	2	14.3
55 to 64 years	4	.....	.....
65 years or over	5	.....	.....
Total	207	111	53.6

THE RAILWAY ACCIDENT PROBLEM.

Railroad accidents to employees have within recent years attracted considerable attention. It is one of the most important occupations, indispensable to the needs of the nation, but in which, at the same time, the risk to life, health, and well-being is one of the most serious met with in industrial employments. The evidence is overwhelming that a large number of railroad casualties are preventable, but while much has been published upon the subject, no thoroughly qualified inquiry into the accident hazard of individual employments has ever been made, either by the Interstate Commerce Commission or the numerous State railroad commissions. Such an inquiry would emphasize the very serious risk in certain well-defined occupations, which, as made evident by insurance mortality experience, falls most heavily upon the economically most important period of life—that is, ages under 45.(a)

ACCIDENTS IN TRANSPORTATION BY WATER.

ACCIDENTS IN NAVIGATION.

The accident risk of navigation is at present but very imperfectly known for the merchant marine and the fisheries of the United States. The census of 1900 returned 3,125 deaths from drowning among 28,073 accidental deaths of males 15 years of age or over, or 11.13 per cent, but how many of these deaths were the result of employment in navigation is not known. The annual report of the Supervising Inspector-General of the Steamboat-Inspection Service returned the number of lives lost, so far as reported in steamboat navigation, as 505 during 1907, but the return includes both employees and passen-

(a) For a further discussion of fatal accidents to railway employees by the writer, see the issues of The Spectator, New York, for December 5 and 19, 1895, and January 2, 1896.

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gers. Of the 505 lives lost as the result of accidents in steam navigation, 193 were the result of collision; 129 of accidental drowning; 55 because of snags, wrecks, and sinking; 31 because of fire; 27 because of explosion or accidental escape of steam; 4 because of accidents to machinery; 3 because of breaking of steam pipes, etc., and 63 from miscellaneous causes. The classification is a very imperfect one, and does not afford a clear insight into the navigation accident problem. It would be advisable to consolidate the data for a period of years and to make a more critical analysis of the returns. At present the specific occupation accident risk in navigation is practically ignored in the reports. It is also quite probable that the returns are more or less defective, and that the true mortality from navigation casualties is much greater than the accident liability as indicated by the reports. A clear distinction should also be made between accidents to employees and others, in conformity to the practice of the Interstate Commerce Commission.

NAVIGATION ACCIDENTS IN GREAT BRITAIN.

The United States Life-Saving Service also reports upon the subject, but without distinction of passengers and crews lost through marine casualties or saved through the efforts of the service. The most conclusive statistical data are the English mortality returns for the three years ending with 1902, which give a fluctuating accident rate of from 3.06 to 4.19 per 1,000 per annum, according to age. According to these returns, at ages 15 to 19 among seamen, the fatal accident rate was 3.75 per 1,000, at ages 20 to 24 it was 3.24, at 25 to 34 it was 3.06, at 35 to 44 it was 4.19, at 45 to 54 it was 4.14, at 55 to 64 it was 4.05, and at 65 or over it was 3.44 per 1,000. Much valuable additional information is also contained in the annual reports to the registrar-general by the Marine Department of the British Board of Trade. Out of 2,303 deaths from all causes among seamen during the fiscal year 1905, 1,159 were from disease, 610 from wrecks or casualties, and 354 from other accidents. The corresponding death rates were 9.8 per 1,000 for all causes, 4.9 for disease, 2.6 for deaths caused by wrecks or casualties, and 2.3 by other accidents. Some very suggestive facts are disclosed by the following official table that clearly emphasize the need for similar information for the United States:

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NUMBER OF FATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES AMONG SEAMEN IN THE UNITED KINGDOM, BY YEARS, 1897 TO 1906.

[From the Sixty-ninth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. 78.]

Year ending June 30—	Number of seamen.	Deaths from accidents.			Fatal accident rate per 1,000 employees.
		Wrecks or casualties to vessels.	Other causes.	Total.	
1897	219,233	899	732	1,631	7.44
1898	218,016	489	650	1,139	5.22
1899	219,383	1,081	662	1,743	7.95
1900	221,107	769	667	1,436	6.49
1901	224,545	844	670	1,514	6.74
1902	225,443	775	621	1,396	6.19
1903	230,161	501	643	1,144	4.97
1904	233,482	481	581	1,062	4.55
1905	234,577	610	534	1,144	4.88
1906	237,811	574	637	1,211	5.09
Total, 5 years, 1897 to 1901	1,102,284	4,082	3,381	7,463	6.77
Total, 5 years, 1902 to 1906	1,161,474	2,941	3,016	5,957	5.13
Total, 10 years, 1897 to 1906	2,263,758	7,023	6,397	13,420	5.93

NUMBER OF FATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES AMONG SEAMEN IN STEAM AND SAIL NAVIGATION IN THE UNITED KINGDOM, BY YEARS, 1897 TO 1906.

[From the Sixty-ninth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. 78.]

Year.	Sailing vessels.			Steam vessels.		
	Number of employees.	Fatal accidents.		Number of employees.	Fatal accidents.	
		Number.	Rate per 1,000 employees.		Number.	Rate per 1,000 employees.
1897	53,267	680	12.77	165,966	951	5.73
1898	49,858	486	9.75	168,158	653	3.88
1899	46,553	625	13.43	172,830	1,118	6.47
1900	43,356	498	11.49	177,751	938	5.28
1901	41,151	679	16.50	183,394	835	4.55
1902	38,400	479	12.47	187,043	917	4.90
1903	36,406	371	10.19	193,755	773	3.99
1904	34,748	477	13.73	198,734	585	2.94
1905	32,466	433	13.34	202,111	711	3.52
1906	30,204	430	14.24	207,607	781	3.76
Total, 5 years, 1897 to 1901	234,185	2,968	12.67	868,099	4,495	5.18
Total, 5 years, 1902 to 1906	172,224	2,190	12.72	989,250	3,767	3.81
Total, 10 years, 1897 to 1906	406,409	5,158	12.69	1,857,349	8,262	4.45

A valuable distinction is made in these tables in the return of persons employed in navigation by sail and navigation by steam in the United Kingdom, the former invariably showing a much higher general death rate and accident rate than the latter. Among persons employed in navigation by sail the rate during 1906 was 19.1 per 1,000 from all causes, 4.8 from disease, 9.5 from wrecks and casualties, and 4.8 from accidents other than wrecks and casualties. Among persons employed in the navigation of steam vessels during 1906, the mortality from all causes was 9.2, from disease 5.4, from wrecks or casualties

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1.4, and from accidents other than wrecks or casualties 2.4 per 1,000. Among persons employed in the navigation of sailing vessels, the accident rate from wrecks or casualties during the last fifteen years has been as high as 12.2 and as low as 5.1 per 1,000. Among persons employed in the navigation of steam vessels the accident rate from wrecks or casualties has been as high as 3.9 and as low as 0.9 per 1,000.

NAVIGATION ACCIDENTS IN THE UNITED STATES.

For the United States we have no corresponding data. The extent of our merchant marine, however, is emphasized by the fact that during 1906 the number employed in transportation by water was 140,929, of which 60.2 per cent were employed on freight and passenger vessels, 3.2 per cent on ferryboats, 14.8 per cent on tugs and other towing vessels, 14.3 per cent on unrigged craft, 5.5 per cent on yachts, and 2.0 per cent on other vessels.(a) The only conclusive data regarding the accident liability in American shipping are the statistics of the industrial insurance company, previously referred to, and which, among other data, were exhibited at the Jamestown Exposition. Out of 505 deaths of sailors and mariners, except captains, 89, or 17.6 per cent, were from accidents. The proportionate mortality at ages 15 to 24 was 50.7 per cent, at 25 to 34 it was 17.3 per cent, at 35 to 44 24.2 per cent, at 45 to 54 12.7 per cent, at 55 to 64 10.2 per cent, and at 65 to 74 it was 4.9 per cent. Out of 126 deaths of sea captains, chiefly engaged in deep sea navigation, 16 deaths were from accident, or 12.7 per cent of the mortality from all causes. Out of 230 deaths of captains not otherwise specified 39, or 17.0 per cent, were from accidents. The proportionate mortality was quite high at ages under 35, and somewhat less at ages over 35, fairly corresponding to the accident liability of sailors and mariners. The number of deaths is not sufficiently large to warrant final conclusions regarding the accident liability by divisional periods of life. Out of 468 deaths of boatmen 94 died from accident, or 20.1 per cent of the mortality from all causes. The proportionate mortality from accident was much higher at ages under 35 than at ages over 35. Out of 68 deaths of bridge tenders, which may properly be included in marine risks, 16, or 23.5 per cent, died from accidents. And, finally, out of 125 deaths of riggers, 22, or 17.6 per cent, were from accidents. The numbers, while fairly indicative of general conditions, are not sufficiently large to warrant final conclusions as to the accident liability by divisional periods of life. The details of the mortality from accidents among captains and sailors are given below, but additional data for other employees in navigation are given in the appendix, Tables XVI and XVII.

(a) See Census Bulletin No. 91, on Transportation by Water in 1906, p. 58.

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NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG SAILORS AND MARINERS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	71	36	50.7
25 to 34 years	81	14	17.3
35 to 44 years	62	15	24.2
45 to 54 years	71	9	12.7
55 to 64 years	108	11	10.2
65 years or over	111	4	3.6
Total	[a] 505	89	17.6

[a] Including one, age unknown.

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG SEA CAPTAINS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	2	1	50.0
25 to 34 years	3	3	100.0
35 to 44 years	8		
45 to 54 years	26	8	30.8
55 to 64 years	30	3	10.0
65 years or over	57	1	1.8
Total	126	16	12.7

NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG CAPTAINS (NOT SPECIFIED), BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	3	2	66.6
25 to 34 years	9	5	55.6
35 to 44 years	27	5	18.5
45 to 54 years	54	16	29.6
55 to 64 years	60	9	15.0
65 years or over	78	2	2.6
Total	[a] 230	39	17.0

[a] Including one, age unknown.

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ACCIDENTS AT DOCKS AND WHARVES.

A large number of men, including stevedores, warehousemen, freight handlers, etc., are employed at docks and wharves in connection with shipping. There are no useful statistical data regarding the accident liability of this class of labor in the United States, but English returns are quite conclusive. Out of 4,551 accidents among persons employed at docks and wharves, from all causes, reported to certifying surgeons during the four years ending with 1903 for the United Kingdom, 535, or 11.76 per cent, were fatal. Some data of value are also included in the report of the registrar-general of England and Wales on occupation mortality for the three years ending with 1902. The general accident rate among dock and wharf laborers was 1.38 per 1,000, increasing gradually from the younger to the older ages. At ages 20 to 24 the rate was 0.70, at 25 to 34 it was 1.15, at 35 to 44 it was 1.28, at 45 to 54 it was 1.82, at 55 to 64 it was 2.34, and at 65 or over it was 2.92 per 1,000. The occupation was made the subject of a special report upon The Causation and Prevention of Accidents at Docks, Wharves and Quays, printed as a parliamentary document in 1900. According to this report, in 1899 there occurred 115 fatal accidents in connection with labor at docks, wharves, and quays, of which 19 were caused by cranes and other lifting tackle, 13 by other machinery moved by power, 1 by machinery not moved by mechanical power, 2 by explosion, 1 by escape of gas, 45 by falls, and 34 by causes not included in the foregoing enumeration. The report is a valuable contribution to the literature of industrial accident prevention. There are no corresponding data regarding this occupation for the United States.(a)

ACCIDENTS IN THE FISHERIES.

The loss of life in the American fisheries is also a matter of mere conjecture. The only statistical data of value are the annual estimates of the loss of life in the Gloucester fisheries, which employ approximately 4,200 men. During the ten years ending with 1906 the number of lives lost was 516, or at the rate of 11.7 per 1,000 per annum. The fatality rate during the last few years has been considerably below the average, having been as high as 18.2 per 1,000 during 1902, and as low as 4.8 per 1,000 during 1906. The accident risk naturally varies considerably according to the fishing

a Another interesting and most valuable report has recently been published upon deep-water diving, an indispensable occupation regarding which it is of much importance to obtain more definite and conclusive information than is at present available for this or other countries. (Report of a committee appointed by the Lords Commissioners of the Admiralty to consider and report upon the Conditions of Deep-Water Diving. London, 1907.)

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grounds, whether on the high seas, lakes, rivers, etc. English data are more definite and conclusive. The conditions, however, under which the fisheries are carried on are quite different. The English data for the three years ending 1902 return an accident liability of 1.89 per 1,000. The rate fluctuates somewhat according to age. According to the Prudential industrial experience, as exhibited at the Jamestown Exposition, out of 162 deaths from all causes among fishermen, 24, or 14.8 per cent, were from accident. The proportionate mortality was 45.5 per cent at ages 15 to 24, 36.8 per cent at 25 to 34, 23.8 per cent at 35 to 44, 10 per cent at 45 to 54, 7.5 per cent at 55 to 64, and 5.1 per cent at 65 to 74. Out of 178 deaths among men employed in the oyster fisheries 14, or 7.9 per cent, were from accident. Details of accident frequency are given in the table below, derived from data furnished by The Procter Brothers Company, of Gloucester, Mass.

NUMBER OF FATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN THE FISHERIES OF GLOUCESTER, MASS., BY YEARS, 1897 TO 1906.

[From list of vessels belonging to the district of Gloucester, 1906.]

Year.	Estimated average number of employees.	Lives reported lost.	
		Number.	Rate per 1,000 employees.
1897	4,500	63	14.0
1898	4,500	62	13.8
1899	4,500	68	15.1
1900	4,500	53	11.8
1901	4,500	46	10.2
1902	4,513	82	18.2
1903	4,400	76	17.3
1904	4,300	25	5.8
1905	4,232	21	5.0
1906	4,200	20	4.8
Total, 5 years, 1897 to 1901	22,500	292	13.0
Total, 5 years, 1902 to 1906	21,645	224	10.3
Total, 10 years, 1897 to 1906	44,145	516	11.7

ACCIDENTS IN THE LIFE-SAVING SERVICE.

There is another occupation which may properly be included in this brief survey of the marine-accident risk, and that is the accident liability of life savers. During the ten years ending with 1906 there occurred in this employment 17 deaths from accident, equivalent to a rate of 0.9 per 1,000. The rate has been as high as 3.8 per 1,000, in 1902, while during some years no death from accident has occurred. It is quite probable that the true accident liability of life savers as the result of their employment is higher than the indicated average accident risk for the last ten years. Quite a number of deaths result from exposure and overexertion, which are properly to be considered as occupation accidents and which, if included, would probably

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increase the rate to 1.2 per 1,000 per annum. The details of accidents in this employment are set forth in the following table:

NUMBER OF FATAL ACCIDENTS AND OF DEATHS FROM ALL CAUSES AND RATE PER 1,000 EMPLOYEES IN THE UNITED STATES LIFE-SAVING SERVICE, BY YEARS, 1897 TO 1906.

[Compiled from the reports of the Life-Saving Service and the supplementary "List of Persons who have died in the Life-Saving Service, as shown by the records of the Treasury Department."]

Year ending June 30—	Estimated average number of employees.	Fatal accidents.		Deaths from all causes.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	1,995	.....	.....	5	2.5
1898	2,036	1	0.5	2	1.0
1899	2,050	2	1.0	6	2.9
1900	2,052	.....	.....	13	6.3
1901	2,071	1	.5	5	2.4
1902	2,091	8	3.8	17	8.1
1903	2,108	1	.5	11	5.2
1904	2,092	3	1.4	6	2.9
1905	2,137	1	.5	8	3.7
1906	2,160	.....	.....	6	2.8
Total, 5 years, 1897 to 1901	9,404	4	.4	31	3.3
Total, 5 years, 1902 to 1906	10,588	13	1.2	48	4.5
Total, 10 years, 1897 to 1906	19,992	17	.9	79	4.0

CAUSES OF ACCIDENTS.

It has been necessary to omit any extended discussion of the causes of accidents and rational methods of their prevention as not strictly within the scope of this article. The analysis of industrial accidents in New York State, covering the years 1901 to 1906, brings out the fact that more than half the casualties and accidents in industry are the immediate result of machinery in motion. Of 864 fatal accidents, 475, or 55.0 per cent, were caused by machinery. Most of the fatal accidents in this group were caused by gearing, belts, shafting, pulleys, elevators, hoists, and cranes. Of the fatal accidents not caused by machinery, the majority were caused by hot liquids, acids, steam, explosives, collapse of buildings, falling objects, fall of persons, vehicles, and animals. Of the nonfatal accidents, 54.6 per cent were caused by machinery and 45.4 per cent were due to other causes. The analysis by industries is exceptionally interesting, and it is a matter of regret that this classification of accidents by causes and industries should have been discontinued.(a) The details of the analysis are given in the table below:

[a] The bureau of factory inspection has recently decided to resume the compilation of industrial accident statistics by industries, and the annual report for 1908 will again contain the statistics discontinued in 1905.

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NUMBER AND PER CENT OF FATAL AND OF NONFATAL ACCIDENTS IN THE INDUSTRIES OF NEW YORK STATE, BY CAUSES, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Causes.	Fatal accidents.		Nonfatal accidents.		Total accidents.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Gearing, belts, shafting, pulleys, etc	150	17.4	2,557	6.7	2,707	6.9
Elevators, hoists, cranes, etc	198	22.9	2,625	6.8	2,823	7.2
Saws, planes, lathes	36	4.2	3,400	8.9	3,436	8.8
Presses, stamping machines	6	.7	2,399	6.2	2,405	6.1
Emery wheels and buffers	8	.9	838	2.2	846	2.1
Textile machinery	5	.6	1,595	4.2	1,600	4.1
Other machines and machine tools	72	8.3	7,544	19.6	7,616	19.4
Total machinery	475	55.0	20,958	54.6	21,433	54.6
Hand tools (axes, saws, hammers)	.....	.....	1,680	4.4	1,680	4.3
Explosives	51	5.9	301	.8	352	.9
Hot liquids, acids, steam, etc	99	11.5	2,476	6.5	2,575	6.6
Collapse of buildings and falling objects	84	9.7	3,031	7.9	3,115	7.9
Fall of persons	66	7.6	2,263	5.9	2,329	5.9
Handling of merchandise	20	2.3	3,513	9.1	3,533	9.0
Vehicles and animals	18	2.1	912	2.4	930	2.4
All other causes	51	5.9	3,246	8.4	3,297	8.4
Total other than machinery	389	45.0	17,422	45.4	17,811	45.4
Grand total	864	100.0	38,380	100.0	39,244	100.0

THE PROBLEM OF ACCIDENT PREVENTION.

The present state of American industrial accident statistics does not warrant final conclusions regarding the true rate of the risk in different employments nor of the approximate determination of the occupation hazard, by degree of injury, for the more important industrial employments. Most of the present information is limited to the facts of accidental death or injuries generally, and while such data have their value they require to be made more specific to throw light upon the larger problem of accident prevention and workingmen's compensation for industrial casualties. The importance of such information has been clearly brought out in an address on "Valuation, in Actions for Damages for Negligence, of Human Life, Destroyed or Impaired," by Miles M. Dawson, before the International Actuarial Congress in 1903.(a) For insurance and other purposes, however, the data presented in this article will prove useful and emphasize the more dangerous trades and the present tendency toward an increase or decrease in the risk of accidental injury in the more important dangerous occupations.(b) To the workingman himself there is no more important problem than the most effective

a Proceedings Fourth International Congress of Actuaries, 1904, Vol. I, p. 929.

b A useful and suggestive work on the prevention of accidents in industry has been published by the German Association of Trade Unions entitled: Unfallverhuetungsvorschriften, herausgegeben vom Verbande Deutscher Berufsgenossenschaften, Berlin, 1900. Mention may also be made of a valuable treatise on definition of invalidity under the title: Der Begriff der Erwerbsunfaehigkeit auf dem Gebiete des Versicherungswesens, by H. Siefart, Berlin, 1906.

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protection of his life and health against the accident risk inherent in, or incidental to, the occupation in which he is employed. Much that could be done for his protection is still neglected, though many important and far-reaching improvements have been introduced in factory practice during the last decade. Accurate statistics alone can furnish a reasonable basis for reform. The possibilities for successful accident prevention have been clearly demonstrated in the experience of foreign countries and the exhibition of safety devices of the American Institute for Social Service.

SOCIAL ASPECTS OF THE ACCIDENT PROBLEM.

The facts presented in this article warrant the conclusion that the casualty risk in American industries is a most serious one, toward the reduction of which every effort should be made. At least a more earnest effort should be made to profit by the industrial methods of European countries. Granting that the underlying conditions are often quite different, and that many of our industrial accidents are the result of ignorance, reckless indifference, or carelessness, the fact remains that an immense amount of human life is wasted and a vast amount of injury is done to health and strength, with resulting physical impairment, which has a very considerable economic value to the nation as a whole. If, for illustration, the accident liability of employees in coal mines in the United States were reduced from 3.10 per 1,000, which was the average annual rate for the period 1897–1906,(a) to 1.29 per 1,000, the average rate in the United Kingdom for the same period, (b) the annual saving in human life would be 915. If the rate of casualties of railway employees in this country were reduced from 2.50 per 1,000, which was the average annual rate for 1897–1906,(c) to 0.98 per 1,000, the average for the German Empire for the same period,(d) the annual saving would be 1,735 valuable human lives. As stated at the outset, upon a conservative estimate, the total mortality from accidents in the United States among adult male wage-earners is between 30,000 and 35,000, of which it should not be impossible to save at least one-third and perhaps one-half by intelligent and rational methods of factory inspection, legislation, and control. In addition there were approximately not much less than two million nonfatal accidents, that not only involve a vast amount of human suffering and sorrow, but materially curtail the normal longevity among those exposed to the often needless risk of industrial casualties.

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[a] Computed from the mine inspectors' reports of the various States.

[b] Computed from statistics included in the annual reports of the Home Office entitled "Mines and Quarries: General Reports and Statistics, London."

[c] Computed from statistics shown in the Report of the Interstate Commerce Commission, Statistics of Railways, 1906, pp. 42, 109.

[d] Computed from Statistisches Jahrbuch für das Deutsche, Reich, 1908, pp. 85 88.

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APPENDIX.

TABLE I.—NUMBER AND PER CENT OF ACCIDENTS IN THE METAL SMELTING AND REFINING INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	26	13.1
Burns	48	24.2
Cuts, etc.	30	15.2
Bruises	37	18.7
Sprains and dislocations	5	2.5
Fractures	21	10.6
Other injuries	9	4.6
Total, temporary disablement	176	88.9
Permanent disablement:		
Partial or complete loss of eyes	1	.5
Partial or complete loss of limbs	1	.5
Partial or complete loss of hands or feet	1	.5
Other injuries	10	5.1
Total, permanent disablement	13	6.6
Degree of injury not stated	1	.5
Fatal accidents	8	4.0
Total accidents of all degrees	198	100.0

TABLE II.—NUMBER AND PER CENT OF ACCIDENTS IN ROLLING MILLS AND TIN PLATE INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	92	15.1
Burns	87	14.2
Cuts, etc.	147	24.1
Bruises	100	16.4
Sprains and dislocations	22	3.6
Fractures	40	6.5
Other injuries	35	5.7
Total, temporary disablement	523	85.6
Permanent disablement:		
Partial or complete loss of eyes	4	.6
Partial or complete loss of limbs	6	1.0
Partial or complete loss of hands or feet	3	.5
Internal injuries	2	.3
Other injuries	45	7.4
Total, permanent disablement	60	9.8
Degree of injury not stated	3	.5
Fatal accidents	25	4.1
Total accidents of all degrees	611	100.0

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TABLE III.—NUMBER AND PER CENT OF ACCIDENTS IN THE MANUFACTURE OF STEAM ENGINES, BOILERS, PUMPS, ETC., IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	505	17.3
Burns	116	4.0
Cuts, etc.	698	24.0
Bruises	737	25.3
Sprains and dislocations	122	4.2
Fractures	201	6.9
Other injuries	179	6.2
Total, temporary disablement	2,558	87.9
Permanent disablement:		
Partial or complete loss of eyes	15	.5
Partial or complete loss of limbs	9	.3
Partial or complete loss of hands or feet	11	.4
Internal injuries	12	.4
Other injuries	270	9.3
Total, permanent disablement	317	10.9
Degree of injury not stated	3	.1
Fatal accidents	33	1.1
Total accidents of all degrees	2,911	100.0

TABLE IV.—NUMBER AND PER CENT OF ACCIDENTS IN OTHER METAL INDUSTRIES IN NEW YORK STATE, BY DEGREE OF INJURY, FOR THE PERIOD 1901 TO 1905.

[Compiled from the annual reports of the New York Bureau of Factory Inspection, 1901 to 1905.]

Degree of accidental injury.	Accidents reported.	
	Number.	Per cent.
Temporary disablement:		
Lacerations	949	20.0
Burns	322	6.8
Cuts, etc.	1,077	22.8
Bruises	673	14.2
Sprains and dislocations	155	3.3
Fractures	298	6.3
Other injuries	266	5.6
Total, temporary disablement	3,740	79.0
Permanent disablement:		
Partial or complete loss of eyes	29	.6
Partial or complete loss of limbs	11	.2
Partial or complete loss of hands or feet	38	.8
Internal injuries	16	.3
Other injuries	822	17.4
Total, permanent disablement	916	19.3
Degree of injury not stated	11	.2
Fatal accidents	69	1.5
Total accidents of all degrees	4,736	100.0

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TABLE V.—NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN COAL MINES OF ILLINOIS, BY YEARS, 1897 TO 1906.

[Compiled from the Annual Coal Reports of the Illinois Bureau of Labor Statistics.]

Year	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	33,788	69	2.04	518	15.33
1898	35,026	75	2.14	438	12.50
1899	36,991	84	2.27	597	16.14
1900	39,384	94	2.39	611	15.51
1901	44,143	99	2.24	422	9.56
1902	46,005	99	2.15	406	8.83
1903	49,814	156	3.13	410	8.23
1904	54,774	157	2.87	507	9.26
1905	59,230	199	3.36	535	9.03
1906	62,283	155	2.49	480	7.71
Total, 5 years, 1897 to 1901	189,332	421	2.22	2,586	13.66
Total, 5 years, 1902 to 1906	272,106	766	2.82	2,338	8.59
Total, 10 years, 1897 to 1906	461,438	1,187	2.57	4,924	10.67

TABLE VI.—NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN COAL MINES OF MISSOURI, BY YEARS, 1897 TO 1906.

[Compiled from the Annual Reports of the Missouri Bureau of Mines and Mine Inspection.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	6,557	8	1.22	23	3.51
1898	7,391	9	1.22	27	3.65
1899	7,792	14	1.80	23	2.95
1900	7,650	10	1.31	23	3.01
1901	9,226	15	1.63	16	1.73
1902	9,161	10	1.09	18	1.96
1903	9,177	17	1.85	22	2.40
1904	10,134	11	1.09	16	1.58
1905	10,415	11	1.06	36	3.46
1906	9,679	16	1.65	27	2.79
Total, 5 years, 1897 to 1901	38,616	56	1.45	112	2.90
Total, 5 years, 1902 to 1906	48,566	65	1.34	119	2.45
Total, 10 years, 1897 to 1906	87,182	121	1.39	231	2.65

TABLE VII.—NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN COAL MINES OF COLORADO, BY YEARS, 1897 TO 1906.

[Compiled from the Biennial Reports of the Inspector of Coal Mines of Colorado.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	7,016	35	4.99	54	7.70
1898	7,425	24	3.23	72	9.70
1899	7,321	42	5.74	108	14.75
1900	7,271	29	3.99	70	9.63
1901	8,000	55	6.88	81	10.13
1902	9,000	73	8.11	105	11.67
1903	10,296	40	3.89	110	10.68
1904	10,769	89	8.26	118	10.96
1905	11,891	59	4.96	100	8.41
1906	12,030	88	7.32	160	13.30
Total, 5 years, 1897 to 1901	37,033	185	5.00	385	10.40
Total, 5 years, 1902 to 1906	53,986	349	6.46	593	10.98
Total, 10 years, 1897 to 1906	91,019	534	5.87	978	10.74

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TABLE VIII.—NUMBER OF FATAL AND OF NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN IRON ORE MINES (INSIDE AND OUTSIDE WORK) OF DICKINSON COUNTY, MICH., BY YEARS, 1897 TO 1906.

[From Annual Reports of the Inspector of Mines, Dickinson County, Michigan.]

Year.	Inside employees.			Outside employees.		
	Number of employees.	Number of fatal accidents.	Rate per 1,000 employees.	Number of employees.	Number of fatal accidents.	Rate per 1,000 employees.
1897	1,532	8	5.22	629	2	3.18
1898	1,801	9	5.00	669	2	2.99
1899	2,097	6	2.86	776	3	3.87
1900	2,314	15	6.48	899	4	4.45
1901	2,604	24	9.22	863	3	3.48
1902	2,864	8	2.79	1,079	2	1.85
1903	2,789	16	5.74	1,215	.....	.....
1904	1,950	6	3.08	1,098	3	2.73
1905	2,221	8	3.60	991	1	1.01
1906	2,233	11	4.93	1,256	4	3.18
Total, 5 years, 1897 to 1901	10,348	62	5.99	3,836	14	3.65
Total, 5 years, 1902 to 1906	12,057	49	4.06	5,639	10	1.77
Total, 10 years, 1897 to 1906	22,405	111	4.95	9,475	24	2.53

TABLE IX.—NUMBER OF FATAL AND NONFATAL ACCIDENTS AND RATE PER 1,000 EMPLOYEES IN METAL MINES IN MONTANA, BY YEARS, 1897 TO 1906.

[Compiled from the Annual Reports of the Inspector of Mines of Montana.]

Year.	Number of employees.	Fatal accidents.		Nonfatal accidents.	
		Number.	Rate per 1,000 employees.	Number.	Rate per 1,000 employees.
1897	9,825	52	5.29	29	2.95
1898	11,096	48	4.33	29	2.61
1899	12,316	49	3.98	22	1.79
1900	13,996	47	3.36	35	2.50
1901	12,078	35	2.90	33	2.73
1902	13,784	47	3.41	45	3.26
1903	14,175	39	2.75	50	3.53
1904	14,480	41	2.83	55	3.80
1905	14,680	48	3.27	41	2.79
1906	15,000	52	3.47	43	2.87
Total, 5 years, 1897 to 1901	59,311	231	3.89	148	2.50
Total, 5 years, 1902 to 1906	72,119	227	3.15	234	3.24
Total, 10 years, 1897 to 1906	131,430	458	3.48	382	2.91

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TABLE X.—NUMBER OF INSIDE AND OF OUTSIDE EMPLOYEES IN QUARRIES IN THE UNITED KINGDOM, AND NUMBER AND RATE PER 1,000 OF FATAL ACCIDENTS TO SUCH EMPLOYEES, BY YEARS, 1897 TO 1906.

[From annual report of the Home Office on Mines and Quarries: General Report and Statistics, 1906, p. 46.]

Year.	Inside employees.			Outside employees.			Inside and outside employees.		
	Number.	Number killed.	Accident rate per 1,000 employees.	Number.	Number killed.	Accident rate per 1,000 employees.	Total number.	Total number killed.	Accident rate per 1,000 employees.
1897	58,845	93	1.58	64,525	30	0.46	123,370	123	1.00
1898	62,752	100	1.59	71,726	34	.47	134,478	134	1.00
1899	64,159	98	1.53	33,836	19	.56	97,995	117	1.19
1900	60,631	115	1.90	33,264	12	.36	93,895	127	1.35
1901	59,968	86	1.43	34,220	12	.35	94,188	98	1.04
1902	62,429	103	1.65	34,679	16	.46	97,108	119	1.23
1903	62,921	84	1.34	35,234	11	.31	98,155	95	.97
1904	62,249	96	1.54	35,328	16	.45	97,577	112	1.15
1905	59,978	85	1.42	34,841	14	.40	94,819	99	1.04
1906	58,385	85	1.46	33,131	12	.36	91,516	97	1.06
Total, 5 years, 1897 to 1901.	306,355	492	1.61	237,571	107	.45	543,926	599	1.10
Total, 5 years, 1902 to 1906.	305,962	453	1.48	173,213	69	.40	479,175	522	1.09
Total, 10 years, 1897 to 1906.	612,317	945	1.54	410,784	176	.43	1,023,101	1,121	1.10

TABLE XI.—NUMBER OF FATAL ACCIDENTS IN QUARRIES IN THE UNITED KINGDOM, BY YEARS AND CAUSES, 1897 TO 1906.

[From Eleventh Abstract of Labor Statistics of the United Kingdom, p. 117.]

Year.	Number of deaths of persons—						Accident rate per 1,000 employees.
	Inside the quarry—			Outside the quarry—		Total.	
	By falls of ground.	By blasting.	Miscellaneous.	By machinery.	Miscellaneous.		
1897	51	13	29	10	20	123	1.00
1898	44	10	46	15	19	134	1.00
1899	44	8	46	8	11	117	1.19
1900	53	13	49	2	10	127	1.35
1901	39	15	32	4	8	98	1.04
1902	44	16	43	6	10	119	1.23
1903	44	8	32	4	7	95	.97
1904	38	11	47	1	15	112	1.15
1905	33	15	37	3	11	99	1.04
1906	39	11	35	1	11	97	1.06

TABLE XII.—NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RAILWAY BRAKEMEN, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	325		
25 to 34 years			
35 to 44 years			
45 to 54 years			
55 to 64 years			
65 years or over			
Total			

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TABLE XIII.—NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RAILWAY FLAGMEN AND SWITCHMEN, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	52	32	61.5
25 to 34 years	114	57	50.0
35 to 44 years	106	37	34.9
45 to 54 years	98	25	25.5
55 to 64 years	175	36	20.6
65 years or over	159	21	13.2
Total	704	208	29.5

TABLE XIV.—NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RAILWAY GATEMEN, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1907.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	4	.....	.....
25 to 34 years	9	1	11.1
35 to 44 years	25	3	12.0
45 to 54 years	29	7	24.1
55 to 64 years	66	13	19.7
65 years or over	83	9	10.8
Total	216	33	15.3

TABLE XV.—NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RAILWAY FREIGHT HANDLERS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	14	3	21.4
25 to 34 years	37	6	16.2
35 to 44 years	48	12	25.0
45 to 54 years	37	5	13.5
55 to 64 years	34	3	8.8
65 years or over	23	1	4.3
Total	193	30	15.5

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TABLE XVI.—NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG BOATMEN, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	22	12	54.6
25 to 34 years	85	21	24.7
35 to 44 years	72	13	18.1
45 to 54 years	87	27	31.0
55 to 64 years	102	15	14.7
65 years or over	100	6	6.0
Total	468	94	20.1

TABLE XVII.—NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG BRIDGE TENDERS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years	3	3	100.0
25 to 34 years	4	1	25.0
35 to 44 years	11	3	27.3
45 to 54 years	13	1	7.7
55 to 64 years	26	7	26.9
65 years or over	11	1	9.1
Total	68	16	23.5

TABLE XVIII.—NUMBER OF DEATHS FROM ACCIDENTS COMPARED WITH NUMBER OF DEATHS FROM ALL CAUSES AMONG RIGGERS, BY AGE GROUPS, FOR THE PERIOD 1897 TO 1906.

[From mortality experience of an industrial insurance company.]

Age at death.	Deaths from all causes.	Deaths from accidents.	
		Number.	Per cent of deaths from all causes.
15 to 24 years			
25 to 34 years	20	4	20.0
35 to 44 years	28	3	10.7
45 to 54 years	30	8	26.7
55 to 64 years	33	4	12.1
65 years or over	14	3	21.4
Total	125	22	17.6

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MEXICAN LABOR IN THE UNITED STATES.

BY VICTOR S. CLARK, PH. D.

INTRODUCTION.

Within less than a decade there has been a large increase in the amount of Mexican labor employed in the United States; but more marked than the growth of numbers has been the increasing range of its distribution. As recently as 1900 immigrant Mexicans were seldom found more than a hundred miles from the border. Now they are working as unskilled laborers and as section hands as far east as Chicago and as far north as Iowa, Wyoming, and San Francisco. The number of different industries dependent upon Mexican labor is increasing. In some occupations Mexicans are rapidly displacing Japanese, Greeks, and even Italians. Lack of education and initiative confines most of these immigrants to the simpler forms of unskilled labor. They compete little, if at all, with what is called "white labor" in the Southwest. They work well and are contented in the desert, where Europeans and Orientals either become dissatisfied or prove unable to withstand the climate. Except in Texas and in California, few Mexicans become permanent residents, and even in those two States a majority are transient laborers who seldom remain more than six months at a time in this country. The volume of Mexican immigration, compared with that of Italians or Slavs upon the Atlantic coast, is still small, in spite of a recent increase. Complete statistics of those who cross the frontier are not kept, but the number does not exceed 100,000 per annum, and probably is not over 60,000. These people, however, are entering a sparsely settled territory with a great demand for labor. Their migration is having important economic effects in Mexico as well as in the United States. And it is becoming an agency of something approaching a social revolution among the Mexican laboring classes.

THE IMMIGRANT.

The Mexican who comes to the United States as a laborer is from the peon or from the tramp labor class of Mexico. The term "pelado," by which those migrating into Texas are known, signifies literally the man who has been stripped, a sort of intensified

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"sans culottes," and indicates that the Mexicans crossing the lower Rio Grande come largely from the migratory laboring class of their own country. In California the Mexican laborers are known as "cholos," a word borrowed from Peru, where it applies to a certain type of Indian. It indicates nothing as to the original status of the immigrant. Probably most of the laborers entering the United States from El Paso or westward, with the exception of a few miners from Sonora and from Chihuahua, were originally in peonage, though they may have escaped from this relation some time before migrating to the north.

Mexicans of either of these classes are Indians, with a slight infusion of white blood. They are Indians in physique, temperament, character, and mentality. A person familiar with Mexico can tell the State or district a laborer hails from by the old tribal peculiarities of his underlying Indian stock. It is said that Mexicans have been unwittingly admitted to Indian schools in the United States without their nationality being known. And yet in almost any large group of Mexican laborers individuals are encountered who, in different surroundings, would easily pass for Europeans. By contact here and there with the upper classes of Mexico and with the older European culture that has given them their language and religion, these laborers have acquired a certain vivacity of expression and demeanor, and probably at least superficial habits of thought, that are largely foreign to the American Indian. Still, this Spanish manner varies in degree with different individuals, and with the immigrants as a body is less in evidence than the dull, docile patience of the Mexican Indian race.

The Mexicans who cross the border to work are either making their first trip to the United States or are making a second or third seasonal visit from the interior of Mexico or are of that big class of American-Mexican frontier residents who reside intermittently in either country. These last are less apt to travel widely or to work regularly, except during cotton-picking time in Texas and in Oklahoma; their migratory habits are not of recent origin, and they are not vacating old industries in Mexico to enter new occupations in the United States. The immigrant of interest is the one who has recently appeared in the field, coming from the central part of the Republic, leaving his ancestral home and callings, and ready to venture almost anywhere in search of work.

These immigrants appear at the border in sombrero, serape, and sandals, which, before crossing the river, they usually exchange for a suit of "American" clothing, shoes, and a less conspicuous hat. In fact, at Juarez and at El Paso a thriving trade of old clothes has sprung up to meet this demand.

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SOURCE OF IMMIGRATION.

The source of most of this immigration is the group of States lying just north of the Valley of Mexico, and chiefly on the western and better-watered slope of the central plateau. This is the most fertile and densely populated portion of the Republic. These States are Jalisco (which is reputed to have the best laborers), Michoacan, Guanajuato, Aguas Calientes, and Zacatecas. Some labor moves northward along the National Railroad of Mexico to Laredo and to Eagle Pass from Queretaro and San Luis Potosi, which are adjoining States; but the chief migration at present is along the Mexican Central Railway, from the district mentioned to El Paso. South of this region the relatively high wages paid tropical plantation labor in Mexico, the greater distance and less direct communication to the north, and the attractions of the capital combine, with other inducements, to keep the laborers from emigrating in any considerable numbers to the United States.

Agriculture and mining are the main industries of this central district. Land is held mostly, though not exclusively, in large estates, and its chief value depends upon resident labor. Subordinate to the rights of the great proprietor are secondary forms of tenure, so well established by custom that the cultivator seems about as well protected by them as a holder in fee simple. When the railroads buy rights of way in Mexico, in many instances they have to acquire two practically independent titles to the same land, one from the "hacendado," the other from the Indian cultivator. The latter, in connection with his right to a specific tract of irrigated land, owns common rights—such as the privilege of pasturing a certain number of head of stock in the open fields. These cultivators are usually settled in villages along water courses. Whether these tenure customs are aboriginal or European in origin, they are now part of the life of the people, and ordinarily give permanence to the agricultural population in the parts of the Republic where they prevail. They explain such contradictory statements of the immigrant as that he belongs on such and such an "hacienda," and Señor So-and-so is his "patron;" and at the same time that he owns a piece of land and expects to return home in time to plant or harvest his crop.

These customary tenant rights probably modify and mitigate the institution of peonage in many parts of Mexico. What is sometimes called the "peon country" (the group of States just mentioned) appears to be precisely where these little villages of feudal tenants are most common, and one of the most interesting secondary effects of the tide of emigration starting northward from this section to the United States is its probable influence in breaking up the patriarchal organization of agriculture and landholding in Mexico.

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Peonage is a debt relation between the employee or tenant and his employer, in which the former is to serve the latter until the debt is extinguished, receiving in the meantime subsistence and certain customary perquisites. The debt is seldom paid in full, because, as a rule, neither party seriously desires it to be paid. If the employee discovered that his account with his employer was about even, he would, in many instances, make this an excuse for obtaining a liberal cash loan from his "patron" to celebrate the next "fiesta," and the "patron" would probably encourage this extravagance on the part of the employee. In Mexico peonage rests solely upon custom and has no specific legal sanction.

The mines of central Mexico were originally worked by slaves or by peons, but for a long time free Mexican labor has been used. Until recently this labor has received a very low wage, rendered still lower in many cases by dependence upon a company store for supplies. It may be doubted whether the wage-earning mine workers of some interior camps have been really more independent, until recently, than the professed peons on the large estates. Like the estates, the central Mexico mining camps have contributed a considerable quota to the emigration northward.

METHOD OF MIGRATION.

In Mexico railways have given the opportunity and the inducement to emigration. Needing unskilled labor for their construction and maintenance, they drew upon the agricultural population along their lines, at first for a few days or weeks of temporary service between crops and later for more extended periods. At first the true peon was extremely averse to leaving his home, and would not work where he could not sleep under his own roof, but gradually he became bolder and more worldly-wise and could be prevailed upon to work for a month or so a hundred miles or more up and down the line. He became accustomed to having silver in his pocket occasionally and found it would exchange for things he had not heretofore thought of having for his personal use. He became attached to cash wages in about the same degree that he became detached from his home surroundings. Employers in the more primitive parts of Mexico say that at present the people will not work for money so long as they have food in their cabins. When they first leave home they will work only long enough to provide themselves with food and shelter for a few days in advance. But the railways, bringing a greater variety of wares at lower prices, have made possible the attractive shop of the railway town, and this market for money has made the latter a more desirable commodity in the eyes of the peon. He has become more of a spender and so a more persistent earner. Even at desert sidings, with

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nothing but an adobe hut in sight, laborers come aboard the train in numbers to buy candy and other trifles from the train peddler. The railways thus have attracted labor and have held it more and more permanently from a constantly widening area along their lines.

The railroads that enter Mexico from the United States run for several hundred miles from the border through a desert and very sparsely settled country, but all of them ultimately tap more populous and fertile regions. Along the northern portion of their routes resident labor is so scarce that workers are brought from the south as section hands and for new construction. This has carried the central Mexican villager a thousand miles from his home and to within a few miles of the border, and American employers, with a gold wage, have had little difficulty in attracting him across that not very formidable dividing line. A general officer of the National Railroad of Mexico stated that his company had brought north about 1,500 laborers to work on the upper section of the road within a year, and that practically all of them had ultimately crossed over into Texas. In September, 1907, 400 were employed in a single gang, principally at ballasting. In October 290 of these were dismissed and, because only 30 applied for their (free) return transportation south, their foreman assumed the others had crossed the border. Wages north of the Rio Grande, in Texas, are $1 to $1.25 gold, as compared with the same rate in silver south of the river. And it must be borne in mind that prices, except for labor, are no lower in this part of Mexico than in the United States.

Officials of the Mexican Central Railway stated that their laborers in the vicinity of the city of Chihuahua, brought from Aguas Calientes and farther south, were constantly leaving them for the United States, so that a considerable part of their force was really labor in transit. Wages here were as high as $1.50 and $1.75 (for extra gangs) in silver; but north of this section of the border the gold wages are higher than in southeastern Texas.

Mines were worked in northern Mexico before railways entered the country, but the development has been so marked since that event as to cause an entire transformation of the industry. Like the railways, the mines have had to import labor from the south; and they also have as steadily lost labor to the United States. The representative of one group of mining properties in the State of Chihuahua said that within a year he had brought to that vicinity approximately 8,000 mine laborers from Zacatecas and the older mining districts of central Mexico, and that not far from 80 per cent of these had left, a part going to New Mexico and the remainder to Arizona.

Thus there is a constant movement of labor northward inside of Mexico itself to supply the growing demands of the less-developed

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States, and this supply is ultimately absorbed by the still more exigent demand—as expressed in wage rates—of the border States and Territories of the United States. Besides this, there is doubtless some recruiting, direct or indirect, by the representatives of American employment agencies. Men are met in Mexico who assert that they have either been engaged or have been approached with a view to engagement in this business. The contract labor and immigration laws of the United States are designed to apply to seaports and to oversea immigrants, therefore their provisions are not difficult to evade, because they are so inapplicable to conditions on the Mexican border. Still, a large part of this immigration is not stimulated, except by general economic conditions.

A number of the immigrants probably come with their own money, or with the assistance of friends or relatives already working in the United States. The migration of cotton pickers into Texas and into Oklahoma is almost entirely of this character at present, though a few years ago "bunches" of labor are said to have been recruited openly in Mexico for Texas plantations. And the tendency is for labor to come across more freely and spontaneously with increasing experience of the advantages afforded in the United States. Employment agents receive the newcomers at the boundary line, greeting them with usually bona fide offers of work at fair wages.

Recruited laborers, whether destined for northern Mexico or for the United States, travel in parties, under a boss or "cabo," who holds the tickets. One is told of locked car doors and armed guards on the platforms of trains to prevent desertions en route; but if these things ever occur, they were not observed in traveling along these lines. Desertions take place, however, and the problem of the recruiter is to deliver a sufficient number of laborers to make a plausible show for his fee—for he seldom delivers all he starts out with. This is not due to the fact that the work he offers is less attractive or well paid, but partly because the peon, in spite of his apparent simplemindedness, had already selected a different destination when he joined the party, and traveled with it only so far as the free transportation suited his convenience.

After he reaches the United States the Mexican is said to observe contracts better than itinerant white labor. An employment agent in Colorado said: "Roving Mexicans are better than roving white men. They will go to a job, if they agree to, and work, though they may not stay long." Another agent said he usually lost but 2 or 3 per cent of a gang of Mexicans sent to a job while en route, but that ten times that proportion of white men, doing the same kind of work, would desert, after receiving their transportation either the whole distance or to some intermediate point. Mexicans will leave a job after working a few days, and are constantly lured away from the

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railways by farmers and ranchers. In 1907 30 per cent of those in southern Kansas are said to have deserted to work in the wheat fields. Whole gangs at a time leave the Texas sections to pick cotton. One contractor said he lost an entire gang, after paying $12.50 railway fare a head, before they reached the job to which they had been sent. A railway official in Dallas, though expressing satisfaction with Mexican track labor, said that 50 per cent left the road to work for the farmers soon after receiving their fare to their job. The Southern Pacific Company loses to the mines a large fraction of its labor each year. In the employment agencies the men's hands are examined, and those that have drill callouses, indicating that they have worked in mines in Mexico, are rejected for railway jobs, because they are the most likely to desert. The motive for leaving railway work is the higher wages paid in other occupations.

Most immigrants passing through El Paso reported that they had paid their own fare directly from some town named in one of the interior States, with money obtained by a "sacrifice"—such as the sale of a yoke of steers, a pair of burros, a crop of corn—or by loans from a "patron" or a relative. Several boys, who reported their ages as between 17 and 20 years, said they had been given money by their father to come to the United States to work, and that their father had obtained the money from his "patron" or by the sale of some small property. Many of these statements are doubtless true in substance, while others are manufactured for the occasion. Recruited laborers who are given transportation are probably supplied with personal information to be used at the frontier.

Interest was aroused by the number of immigrants who reported that they had paid their railway fare with money loaned them by a "patron." The name of the "patron" was often given, and he was sometimes a political officer—in one case a judge—and sometimes a merchant, possibly also a landowner. Strictly the word "patron" might be expected to mean an employer, and especially the employer to whom the immigrant had rendered traditional service as a peon. But this class of employers is so unanimously hostile to the emigration of labor that it is extremely unlikely that any one of them would assist this movement, even though he received a high rate of interest on his money. The immigrants claimed to be paying from 5 to 12 per cent for loans running probably six months. In the districts of Mexico from which this labor comes every one from whom information was sought, without exception, scouted the idea that a bona fide employer could be induced by any means within reach of his workmen to assist them to emigrate, even for temporary employment abroad. The common opinion there was that these so-called "patrons" were secretly representing employing interests either in northern Mexico or the United States, and that they were possibly

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collecting railway fare from the employer on one hand and from the laborer on the other, charging the latter in addition with interest. Whether or not this is ever done, the story told by the immigrant on the border, of aid received from his "patron" to enable him to leave the country, is nowhere credited by well-informed residents of the interior.

Tickets from points in Jalisco and in Guanajuato to El Paso cost the emigrants from $20 to $25 in Mexican currency, or one-half that amount in American money. Laborers appear usually to provide themselves with from $30 to $50 (Mexican) for a trip to the United States. A good riding horse or a few pigs sell for the former sum, so it is not beyond the reach of most industrious peasants. Nearly all the immigrants who had left families behind them explained that they had given their wives a few dollars for subsistence during their absence.

Mexicans residing on the American side of the boundary line said that even where there is easy railway communication a laborer and his family will often travel 300 miles on foot to reach the border. This was near El Paso. During a good cotton season in Texas laborers often come on foot and go back in carriages which they have purchased with their season's earnings. Though the Mexican of the Indian type is not ambitious, when he once gets a definite object in view he appears to be very persistent in following it up. A youngish boy passing through the El Paso station stated, and as proof showed his calloused hands, that he had worked in a quarry in Mexico for two years. His wages had been $6 Mexican ($3 United States currency) a month and rations, and it had taken him the full two years to save money enough to get to the frontier. He wanted to come to the United States, because during one week he could earn more there than during a month in Mexico.

Immigration, especially through El Paso, was larger than usual during the season of 1907, partly because a drought had followed upon the unfavorably wet year of 1906. Crops were short, provisions expensive, and work not so abundant as usual in exclusively agricultural sections. This made it easier for the "enganchadores" (recruiters, or, more literally, pressmen) to secure workers for mines and for other large enterprises, and also stimulated voluntary emigration.

The Mexican laborer usually migrates for short periods. When the rains begin, usually about May, he must be at home to plant his crop. After that he is willing to work during the growing period, leaving his family to attend to irrigation and weeding; but he must be at home for the harvest. From that time until the fiestas ending with the December holidays are over, the labor market in Mexico is tight; from January to May the workman is willing to go anywhere pro-

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vided it is not too cold. This seasonal variation in the labor supply accounts in part for the comparatively short periods for which immigrants come to the United States. Many of those passing through El Paso have made the trip from central Mexico to Arizona or to Kansas City for a second or third time, but after a number of such trips the home tie loosens, and it is not unusual for the family ultimately to accompany the husband, thus taking the next step toward a permanent removal, either across the border or to its vicinity.

Along the Mexican Central Railway the migrating months are said by the railway officials to be February, March, and April; also August and September.

DISTRIBUTING CENTERS.

Probably more Mexican laborers enter the United States through El Paso than cross the border either east or west of that city. During August, 1907, there were admitted at this point 5,802 laborers, and during September of the same year 5,765. From January to the end of September about 26,000 were admitted. The reasons that make El Paso the most important distributing point for Mexican immigration are its direct railway communication with the swarming States of Mexico; the presence across the border, in the State of Chihuahua, of large mines and smelters, which, in supplying their own needs, assist the southern laborer to the frontier; and the direct railway communication that the city enjoys with such chief labor-absorbing areas of the United States as the prairie grain and cotton region, the Colorado and the Territorial mining fields, and California. Three great railway systems that diverge from El Paso use Mexican unskilled labor largely, and in some cases almost exclusively, over a principal part of their route; and railways are the great labor feeders to other industries.

West of El Paso there is considerable diffusion of mining labor across the border both from northern Chihuahua and Sonora; and some labor enters from the west coast of Mexico, by the Guaymas line, through Nogales. After the Southern Pacific Company's extension is completed and a west coast connection made with Guadalajara, the capital of the populous State of Jalisco, and the second city in size of the Republic, it is probable that a much larger movement of labor will occur across this part of the boundary line.

Immigrants crossing the Rio Grande east of El Paso usually find employment in Texas, either upon railways or ranches or as farm laborers. Some of this immigration passes north into Oklahoma during cotton-picking time, and it works southeastward into Louisiana, where Mexicans are being introduced on cane plantations. Much of this labor reaches the frontier at Eagle Pass, at Laredo, and at

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Brownsville. Near the latter town, in the early autumn of 1907, sixty boats were said to be employed ferrying Mexicans across to the United States. But the immigration to Texas is not confined to railway points to the same extent as farther west, partly because the neighboring sections of Mexico are a trifle less desert and partly because of the long-established intercourse all along the border, antedating the railways and even American possession of the country.

Of the border cities mentioned El Paso is the only one that is a real labor depot. San Antonio is probably the most important distributing point of Mexican labor for Texas proper. Kansas City, Mo., is given as their destination by many arrivals at El Paso, and that city is resorted to by them as an employment center. Los Angeles serves the same purpose for Southern California, and has a large colony from Old Mexico. Tucson, Ariz., and Trinidad and Denver, Colo., have agents that handle a fairly large number of Mexican laborers.

METHOD OF DISTRIBUTION.

The immigrants arrive at the border practically without funds, but with the moral certainty of securing immediate employment. Here they are met by the representatives of large authorized labor contracting companies, who regularly supply an entire railway system, or many of its divisions, with all the labor needed, and by private agents looking for smaller bodies of men for some special section, or simply speculating in labor; that is, holding it at their headquarters on subsistence until they can secure a good commission by delivering it to some enterprise badly in need of workers. These speculating agents are said to mislead men with promises of work at high wages which they are unable to provide, in order to keep them away from competing agencies.

The large labor contractors combine with this business that of supplying provisions, clothing, and other commissary articles to the workers during their term of employment. Indeed, this is their main source of revenue, and some firms are said to furnish labor to railways without commission in return for the privilege of keeping the commissary. The workingman buys at the commissary because he can get credit there, which is not given by other merchants; and the commissary can grant this credit, because its arrangement with the employing corporations gives it the exclusive right to charge such debts against the pay roll. Laborers who pay cash are generally free to patronize other stores. Although commissary debts are thus secured to some extent, prices are high, the reason given for this being that losses from bad debts are very heavy.

After the immigrant has been given a job he receives transportation to his place of work from the labor agent. This transportation

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is furnished free by the railways to men employed by themselves and at reduced party rates to other employers. Besides this the agent has to provide subsistence to destination, an amount varying from less than a dollar to $3 or $4 in case of long journeys. This subsistence and paid railway fares are charged to the laborer's account and repaid by him from wages. The distance that a laborer may be sent varies from a few miles to 2,000 miles. One of the larger firms had sent Mexican laborers to different railroads, during eight months of 1907, as follows: To the Chicago, Rock Island and Pacific Railway, 3,523; to the El Paso and Southwestern System, 1,593; to the Fort Worth and Denver City Railway, 973; and to the Pecos Valley and Northeastern Railway, 421.

Along the Texas border, and even in the larger labor centers, are men who secure laborers in small numbers for cotton and beet planters and other minor employers. Some of these recruiters are themselves hardly above the laboring class, and several are Mexicans or Spanish-speaking Americans. It is not unusual for a group of planters in northwestern Texas or Oklahoma, or a beet sugar company in Colorado, to send a manager or foreman to the Rio Grande to gather up a party of 100 or more men and their families, and some parties are taken even as far east as the Mississippi. But as a rule farmers and planters prefer to get laborers by offering higher wages than the railroads, thus drawing men from the sections and saving for themselves railway fare and the other expenses of recruiting.

In Mexico itself the "enganchadores" work principally among the city and tramp labor population, partly because in many country districts hostile sentiment and legislation make open recruiting dangerous. The "enganchados," as these recruited laborers are called, are not considered good workers by Mexican employers, and have the reputation of being mostly broken-down city workmen and loafers. Possibly they do not emigrate. American labor agents seem to think that men specially recruited from Mexico are better than those picked up by chance along the border. Possibly the recruiting for the American labor market is largely secret, and therefore conducted with more success in country districts and among a more reliable class of workmen than the labor drummed up openly for local enterprises.

The progress of the laborer from his home in interior Mexico to his place of work in the United States is therefore in two main stages; first, as a recruit he is taken, or as a free immigrant he works his way, to the border. At this point he falls into the hands of the labor agent, who passes him along to his final destination. The first stage of the journey may or may not be paid for by the laborer himself; the second is in practically all cases at the expense of the employer.

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OCCUPATIONS IN WHICH MEXICANS ARE EMPLOYED.

RAILWAY LABORERS.

With the possible exception of agriculture at certain seasons, more Mexicans are employed in the United States as railway laborers than at any other occupation. It is from this occupation that they drift into other lines of work.

Mexicans are distributed as railway laborers over practically all of Texas, New Mexico, and Arizona. They are the main labor employed on the railroads of California as far north as Fresno, in southern Nevada, and in Colorado, and on some Colorado lines into Wyoming; also, they are working in increasing numbers along the Chicago, Rock Island and Pacific Railway, and the Atchison, Topeka and Santa Fe Railway through Kansas, Missouri, and even into Chicago and to central Iowa.

In Mexico native labor now does practically everything on a railroad except operate fast trains, superintend construction and administration, and do more responsible shopwork. In the United States this labor is confined to track maintenance—usually under American or European foremen—and construction, and employment as extra and yard gangs. There are many Mexican section bosses scattered throughout the Southwest, and their number is likely to increase.

The reasons for the growing use of Mexican labor in these occupations are that it is cheap and docile; but these qualities alone would not give it favor were it not also fairly efficient. Employers and foremen do not differentiate the various motives that induce them to prefer a certain kind of labor, but they are usually perfectly clear as to the order of choice among different nationalities.

A trackmaster who had worked various kinds of labor in southern Kansas said: "Mexicans are better than Greeks or Italians, and next to the American 'hobo.' They must be well fed, and want fresh beef and mutton, but don't eat so much pork. They don't have feuds and disorders like the Italians, who are always fighting unless the whole gang is from the same town in Italy. We send a man every spring to the Rio Grande to get our men for the summer. We have to keep our engagements with them, or we can't get any men the next year. Though they are used to low pay at home, they want as much as anybody when they get to this country." A Texas railway official said: "We have worked Mexicans out of El Paso for several years, and since 1903 have substituted them for Italians—who were disorderly—and for Negroes in northern Texas, nearly to Texarkana. They suit us better than any other immigrant labor we can get. They are better than Negroes at ballasting, laying ties, and ordinary track work; but the Negroes can beat them laying rails, and will work better long hours or at rush jobs, as in case of washouts or getting a track around

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a wreck. Our chief difficulties are due to ignorance of the language, and to the rough ways of our foremen—who sometimes frighten the Mexicans so they won't work. Mexicans are not very regular, and we have to carry about 50 men on a pay roll to be sure of 30 to 35 men working every day."

A large labor contractor, who is also an employer, said: "I have not found Mexican laborers irregular on section work. They often average about twenty-five days a month. Some stay on the same section seven or eight years. Much depends on the foreman. I can tell the character of a section boss by the number of new men he wants. Some never need new men, because their old hands stay with them, and if any leave, others come from neighboring sections. I know good Mexican section foremen."

A road master in southern California said the Mexicans had been employed in his division four or five years and were displacing other labor. He preferred them to other laborers obtainable, especially to the Japanese. "When you have occasion to discharge one Japanese all would quit, and so you are left without men. But if a Mexican proves a poor or undesirable workman, you can let him go without breaking up the whole gang."

A railway contractor in Los Angeles expressed the same preference for the Mexican as compared with the Japanese, and said the latter could not be trusted to carry out a job just as directed, but that the Mexican was careful to do exactly as he was told. There was not a single instance in which men in actual touch with railroad labor did not give the Mexican the preference over either Japanese or Greek; but one manager stated that he would prefer Japanese, because they were more intelligent.

An objection to the Greeks, as stated by one contractor, was that they would submit to graft. On one system where Greeks were employed section bosses made them pay a dollar a month for their jobs, and shared the labor agents' fees when new men were brought on. The result was that the foremen, practically in the pay of their own workmen, lost authority over them, and the latter soldiered and neglected their work. Mexicans, it is said, will not submit to exactions of this kind, and this is a chief cause why they have lately been given a preference on the road in question.

No instances were discovered where the wages of section hands were less than $1 a day in 1907, although in previous years men may have worked for 75 and 80 cents in some places near the frontier. Shop laborers at Laredo, Tex., received 75 cents in 1906 and $1 in 1907. In addition to day wages, the men are given the use of huts or bunk cars. A short distance north from the border the rate of pay rises to $1.25 a day, and this is generally the wage along the Atchison, Topeka and Santa Fe Railway and the Chicago, Rock Island and

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Pacific Railway north of Texas. They received $1.40 and $1.50 a day in Kansas. In northern Texas section hands were paid $1.15 in 1907, and were paid $1 previously. In northern Arizona the rate had risen from $1 to $1.25 within a year or eighteen months. On the line of the Southern Pacific Company, near Bakersfield, Cal., the following rates were said to be in force for ordinary section hands: Greeks, $1.60; Japanese, $1.45, and Mexicans, $1.25 a day. Foremen said that the Mexicans did as much work as men of either of the other nationalities, and that the discrimination in wages was due to arbitrary orders issued from headquarters by men who had no practical knowledge of the efficiency of different kinds of laborers.

Extra gangs are paid higher wages, partly because it is often necessary for them to board in camps, instead of receiving rations, which makes their cost of living higher. Mexicans of this class were paid as high as $1.75 a day on the Fort Worth and Denver City Railway, in Texas, during the cotton-picking season of 1907. This high wage was partly to keep them away from the farmers. However, $1.50 is not an unusual wage for Mexican extra men. Upon one railway in central and eastern Texas section hands were paid, in the summer of 1907, $1 and board, or $1.50 when they boarded themselves. This matter of board is not always left to the choice of the laborer. If he lives in a section house or hut at a station or section headquarters and is permanently located on one section, he usually has an opportunity to board himself; but if his work requires him to shift from section to section, and he lives in bunk cars, he is usually boarded. The character of the board depends upon local conditions, but testimony was general to the effect that railroads fed their men better than the men fed themselves. The houses provided for section men are very primitive in most cases, frequently being single-room adobe huts or cabins built of condemned ties set vertically with a roof of boards covered with earth, and a clay floor. Often there are no glass windows. These houses are as good as the laborer occupied in Mexico and seem to be adapted to his mode of living.

As he goes northward the section hand encounters a more severe climate, but, to compensate for this, higher wages and better housing. In Oklahoma, during the summer of 1907, scattering Mexicans were employed at $1.50 a day, or the same wages paid Europeans. A gang of Mexicans worked near Fredonia, Iowa, until January 20, 1907, without apparent suffering. This was attributed to good food and warm houses.

In order to hold labor at lower wages the railroads give Mexicans return transportation to El Paso, if they have worked regularly three months. This applies to all railroads entering El Paso itself, but probably not to smaller lines and those distant from the frontier.

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One line gives return passes only in the fall, so that a laborer beginning in February must work six months, one beginning in August but three months, to receive this benefit.

In Mexico wages are nominally about the same as immediately north of the border, but, being paid in silver, have only one-half the purchasing power of those in the United States. The National Railroad of Mexico pays section hands south of Saltillo $1, and north of that city to Laredo $1 and $1.25, which is double the rate paid two years ago. The Mexican Central Railway, in the neighborhood of the city of Chihuahua, pays section men $1.50 a day and track layers $1.75. The present exchange and purchasing power of these wages make them equivalent to from 50 to 87½ cents in United States currency. At Ciudad Juarez, across the river from El Paso, the Mexican Central Railway pays laborers $2 a day, equivalent to $1 in United States currency, and about the same real wage as was paid until the present year on many American railroads in the Southwest.

Mexican railway laborers live on very little when they draw rations, but demand a liberal diet (usually including fresh meat) when boarded. Board costs about 50 cents a day. One road charges $3.75 weekly, but its representative said that a Mexican ate on an average from 1 pound to 1½ pounds of fresh meat daily. Contractors and foremen find the efficiency of Mexican laborers so much greater when boarded that it pays to give them regular meals instead of rations, even though higher wages must be paid to compensate them for the increased cost of living.

Regulations as to rations limit the amount a man may draw to his wage credit. On one railway, when hands were paid $1 a day, they were allowed to draw 65 cents' worth of supplies for every day worked. Now that wages are $1.15 each man may draw to the value of 75 cents. This ration allowance is not sufficient for Mexicans accompanied by large families, therefore laborers have recently been divided into parties, each under a headman, or "cabo," who draws supplies equal to the aggregate ration credits of his party. The Mexicans then adjust among themselves the distribution, those having families buying the excess of the single men. The division is said to be made without disputes among the members of the different messes.

As a body, the railway laborers who have come from Mexico seem to be fairly well treated. The editor of a Spanish daily in the City of Mexico said that he had received letters from railroad hands in Texas saying they were ill treated, but that the contents of the letters, which had been lost or destroyed, did not impress him seriously. There were some complaints in Colorado and in New Mexico of petty grafting by minor railway officials. The laborers say that pay clerks take part of the pay due them from their envelopes, claiming the

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shortages are caused by fines or deductions, when this is not so. An attorney for some of these men had correspondence showing that these charges were not unfounded. The companies try to suppress such dishonesty, because labor is scarce and Mexicans will leave work when they have grievances of this kind, and will prevent other laborers of their nationality from taking their places by reporting these wrongs. Few complaints were heard of ill treatment by brutal bosses. It seems likely that the Mexican's attitude of passive obedience antagonizes foremen less than the more aggressive attitude of Europeans and Orientals. Mexican foremen are employed in some places and are said to be satisfactory. The best evidence that the condition of this kind of labor is not very bad is that the immigrants return repeatedly to the same work, often in the same locality, after going home for a crop season or to see their families.

A hardship of which Mexicans and white laborers alike complain is the difficulty of getting their pay if they leave a job between pay days. The rules of most large employing concerns require the workman to come for his balance the next pay day, which may be nearly a month off. On the railroads men are usually paid, in such cases, if they come personally to division headquarters and properly identify themselves. Mexicans are often so ignorant of these formalities that they will walk a hundred miles or more to headquarters only to find that they have neglected some such requirement, and are therefore unable to get their money.

In Mexico natives are employed in many semiskilled occupations of the railway service at about the same wage as common laborers receive. Pullman car cleaners at Monterey are paid $1.50 (silver) a day. They work under a Mexican foreman and were reported by the American local manager as very reliable employees. At Aguas Calientes Mexican laborers and machinists or machinists' helpers are employed in the head shops of the Mexican Central Railway, laborers getting 50 cents (silver) a day and machinists' helpers and machinists from $2 to $5 (silver). American machinists, of whom there are a number employed, are usually paid monthly salaries, said to average $125 in American currency. This would make their daily pay about double that of the better-paid Mexicans. White employees said that their Mexican helpers were slow and not very efficient, it requiring two or three of them to do the work of an ordinary machinist's helper in the United States. They were said to lack ambition, to be irregular in shop attendance, and to drink hard after pay days, thus losing part of their time. The lack of ambition may be partly accounted for by the fact that they are kept subordinate to American and European workers by a line drawn in accordance with nationality rather than competency.

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At the shops of the National Railroad of Mexico, in Laredo, common labor is paid $1 (gold) a day. Until last year, when there was a strike, they were paid 75 cents a day. The present wage of these laborers is about four times that paid in similar occupations in central Mexico.

FARM LABORERS.

The Mexican immigrant has been in most cases an agricultural laborer in his own country, and, though his experience at home has given him little familiarity with American farming methods, it is to this occupation in the United States that he turns most readily when the opportunity offers. Cotton and corn, the staple crops of the States where Mexicans are most numerous in this country, are both cultivated extensively in Mexico. Stock raising is a great industry on both sides of the boundary line. In this industry the Mexicans, many of whom were born north of the border, have excelled for a long period. They are now found as shepherds, cowboys, and "broncho busters" as far north as Wyoming. But the main importance of Mexican labor in agriculture is during the harvest season in the cotton fields. Cotton picking suits the Mexican for several reasons: It requires nimble fingers rather than physical strength, in which he can not compete with the white man or the Negro; it employs his whole family; he can follow it from place to place, living out of doors, which seems to suit the half-subdued nomadic instinct of a part of the Mexican race; it is a seasonal occupation, fitting in conveniently with the demands of labor and leisure in his own country, and it is well paid, and paid by the piece.

In Texas and in Oklahoma cotton is raised by prairie farming methods, with more extensive use of machinery than farther east, where soil and climate, and the cotton itself, are different. In these two States a white farmer can raise more cotton than several families can pick in proper season, in the same way that the Kansas farmers can raise more wheat in normal years than the resident labor of the State can harvest. So the man with 40 or 80 acres of cotton opening secures two or three families of Mexicans that migrate from the southward at this season, camp in an outhouse or in their canvas-topped carts, and pick the fields clean, then move on northward to where the crop is just maturing.

Pickers are paid from 50 cents to $1 a hundred pounds in the seed. Two or three hundred pounds is a fair day's work, though under favorable conditions 400 pounds are sometimes gathered. Children often pick as much as adults, so that a man with a family can earn $5 or more a day during the height of the season.

In Texas Mexicans are employed throughout the year on onion and vegetable farms and [illegible] or hired cultivators on cotton and rice plantations. [illegible]rience makes them very good

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irrigators. For the cultivation of onions they are paid by the hundred. Wages on farms in southeastern Texas are about $15 a month, the Mexican receiving shelter, but boarding himself. Wages, except during the very busy seasons, are about 60 cents a day. Mexicans are good grubbers, and are about the only laborers employed to clear the south Texas ranches of mesquite brush prior to cultivation. They do this work under contract by the acre, rates varying with the neighborhood and the amount of brush growing on the land. Near the lower Rio Grande ranch hands and shepherds are paid less. A Mexican interviewed had relatives working on a ranch near Laredo for $8 a month and rations; but this was less than is commonly paid in the vicinity. In the country districts on both sides of the border Mexican money is current, and not many years ago it was not unusual to pay the wages of herders in this coin. Mexican shepherds in Lasalle County, Tex., were paid $12 (Mexican currency) a month and a ration of coffee, beans, corn meal, salt, and goat meat.

Within two or three years wages have risen rapidly in the part of Texas dependent upon Mexican ranch and farm labor. A farmer in Ward County, near the western border of the State, said that in 1903 Mexican farm hands could still be hired for 50 and 75 cents a day, American currency, but that in 1907 they were paid $1 and $1.25 a day, and even higher. White farm labor commands $1.75 and $2 a day in the same country.

In Kansas and in northern Oklahoma many Mexicans now leave railway gangs to work in the grain fields during the harvest season. Contractors estimate that nearly one-third leave them for this reason.

In the vicinities of Rocky Ford and Sugar City, Colo., in the valley of the upper Arkansas, sugar beet cultivation has extended rapidly within the past seven years, and there are now six large factories operating in this district. Here immigrants from Old Mexico compete with New Mexicans, Russians, and Japanese in the beet and the melon fields. New Mexican laborers have been employed since 1900, but Old Mexicans have come in more recently. The latter have not displaced other laborers to the same extent as on the railways, but seem to have held their own without difficulty.(a)

The beet factories own considerable land, which they cultivate either directly or through tenants; but they depend chiefly upon neighboring farmers for their supply of beets. The farmers raise under contract with the factories and their crop is financed partly by the manufacturers. The sugar companies also bring in what labor is needed from outside, assuring men an opportunity to earn 15 cents

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a For convenience the term "Old Mexicans" is used in this article to designate persons of Mexican descent born in Mexico, and "New Mexicans" to designate those of Mexican descent born in the United States, and mainly in New Mexico.

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an hour. They advance railway fare from El Paso—about $9.50 for each adult. Prices for contract work are the same for all nationalities, but Indian schoolboys from New Mexico have been brought in to work by the hour and are somewhat cheaper than other workers. However, on account of school duties, they work only in the spring. The contract price for thinning beets is about $7 an acre, though it may range anywhere from $6 to $8. Beets are topped by the ton, the usual rate being 50 cents. A crop runs from 15 to 25 tons per acre. Japanese usually try to secure at least 15 acres to thin and top, but Mexicans will take less. Between the thinning and the topping season many Mexicans work in the melon fields at from 15 to 20 cents an hour, or find employment on the railway at $1.25 to $1.30 a day. The consensus of opinion among a number of beet growers was that Russians made the best laborers, both for the farmer and for the country, because they were better workers and ultimately bought land and became citizens. There was a less decided disposition to prefer Japanese to Mexicans, but the laborer from Old Mexico was generally preferred to the Spanish-speaking laborer from New Mexico as being both a more regular and a more reliable hand. At some mills Mexicans are preferred to Japanese. An attempt has been made, by building an adobe village, to hold the Mexicans as permanent settlers in the vicinity of the Swink factory.

The chief complaints against the Mexicans are that they are not reliable in observing their contracts and will not work regularly. The first brought into the country, about 1900, were driven out by hostile workingmen and farmers, but this sentiment against them is said to have disappeared. In competition with other and constantly more varied nationalities they are not increasing, or increase but slowly. In 1907 Koreans began to be employed—displacing principally the Japanese—and the temporary immigration of some 600 Indian laborers satisfied a demand that had formerly been filled by Mexicans. But immigrants from Old Mexico are displacing New Mexicans, and they continue to be more numerous than workers of any other nationality. Meantime, they are finding new fields of employment in kindred occupations elsewhere. Recently they have been shipped to some extent to the Greeley, Colo., potato country, where Europeans and Japanese have been the only imported labor employed heretofore.

In the irrigated sections of New Mexico and of Arizona local Spanish-speaking laborers, supplemented by some Mexicans from across the border, are employed in raising vegetables and alfalfa and other forage crops. When an attempt was made recently to establish sugar beet cultivation in the Salt River valley, Arizona, Japanese were brought in to raise this crop; but the enterprise failed, and the Japanese have left, not competing with Mexican laborers—who are

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paid as high as $2 a day at certain seasons—in other lines of farming and in ranching.

Mexicans are employed by fruit growers, sugar beet raisers, and general farmers in southern California; but in this State they are not relatively so important a source of rural labor supply as they are in Texas. Nevertheless the more extensive employment of Mexicans by the railroads is likely to result in their being used more by the farmers, who secure hands from railway gangs. Farm wages in southern California are very high, in many places not less than $2 for good men, and this wage attracts a considerable supply of American labor.

From Texas, Mexicans have been taken east as far as the Mississippi River, and a few gangs of cotton pickers have been tried even in the Yazoo Delta, but with only partial success. The employment of Mexicans on cane plantations, already tried experimentally, may increase, more particularly during the harvest season; but they are not likely to be employed as mill laborers, and so far as could be learned have never been used in beet sugar factories.

The main value of the Mexican in agriculture is as a temporary worker in crops where the season is short, especially in harvesting cotton, grain, and sugar beets. Mexicans are not likely to be employed the year round by small farmers, because they are not entertained in the family like American, German, Scandinavian, or Irish laborers of the North. Yet they do not occupy a position analogous to that of the Negro in the South. They are not permanent, do not acquire land or establish themselves in little cabin homesteads, but remain nomadic and outside of American civilization.

MINE LABORERS.

Mexicans have become in a way the scavengers of the mining industry, picking up the positions left vacant by other classes of workers, and supplanting the least skilled and reliable Europeans and Asiatics. They mine both coal and metal at different places, especially in small mines with shallow workings, and are extensively employed as muckers and surface men. The Mexican is a fairly good man for development work, or for cheap mining undertakings where a poor or a penurious company wishes to "rat hole" a property; that is, work out the ore without scientific development or expert engineering advice. In Old Mexico native miners are employed exclusively in deep and dangerous workings that would try the skill of experienced white labor. Mining is in parts of that country almost a hereditary occupation with a certain class of workers; but miners of this kind either stay at home or else do not form a sufficiently important element in the Spanish-speaking mine popula-

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tion of the American border States and Territories to raise the general character of this labor.

In the copper and silver mines of New Mexico and of Arizona, American and Cornish miners are employed, with considerable numbers of Italians and Slavs, who are both miners and laborers. The latter two nationalities predominate in the coal mines. American Negroes are sometimes employed as hostlers and mule men, but are rarely miners. In the larger camps, and in small camps connected with important properties, union labor is used. The Mexican supplements all these other kinds of labor. He will be found mining copper and silver—that is, using drill and powder—in some new mine opened in a new district, to the entire exclusion of white labor, yet later, if the property proves valuable, he may be supplanted wholly by skilled American miners. In a district where white labor is chiefly used a few Mexicans will sometimes be found in smaller and less profitable workings. In most border districts large gangs of Mexican surface men, wood choppers, and often muckers are encountered. There are large mining centers—as at Fierro, Silver City, and San Antonio, N. Mex., where coal and iron as well as other metals are mined—that use Mexican labor mainly, stripping and in shafts and drifts. This mingling of Mexican and white labor, without either supplanting the other entirely, comes from an equilibrium of competitive conditions, due to the general scarcity of labor, the extensive development now occurring, and the easy adjustment of the wage of the Mexican to his true worth. The rates paid white miners are standardized by custom and by union regulations and range from $3 to $5 a day. Mexicans will accept a rate much lower than this—not exceeding $2 a day in most places—but they do not do as much work as a white man. Mining men were undecided which got out the ore for the least money. In one mine, where a complete change from Mexican to American miners had been made within twelve months, one of the owners attributed the change to the fact that the new manager was used to working with white men, adding that there was no special economy in changing, and at the same time no appreciable loss. He suggested, however, that a manager working for absentee owners might make a little more out of the Mexicans for himself, especially if he had an interest in the company store. Another mine owner, who was employing Mexicans alone, said that he was influenced by fear of labor difficulties—that his mine was isolated and a white union might tie it up entirely; but that if some of the Mexicans left him or became dissatisfied he could easily replace them.

In the coal mining district around Trinidad, Colo., Mexicans have been employed as strike breakers; but with Mexican labor exclusively the output of the mines was so irregular as to cause serious losses;

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therefore, in this field other labor has been substituted almost entirely. The Mexicans make very fair coke pullers, and are employed especially upon extra gangs. They seem to prefer the irregular work and pay they get in these gangs to the monotony of steady employment even at a sure wage.

Within the Mexican labor area of the United States there are four coal-mining districts. The most important is in southern Kansas and Oklahoma, which employs chiefly Italians and Negroes, with no Mexicans except a few surface men employed at an extreme offshoot—possibly not strictly a part of this field—at Thurber, Tex. The field of next importance and of prime importance for coking and ore reduction is in southern Colorado and northern New Mexico, the largest mines in the Territory having been opened within a year or two. Here Spanish-speaking labor, from both New Mexico and Mexico, is employed to some extent, though Slavs and Italians do most of the actual mining. In a careful analysis of the nationality of the mine workers employed by the Colorado Fuel and Iron Company in 1905, Dr. Walter Morritt, of the sociological department of the company, gives the following figures: North Italians, 1,139; South Italians, 489; Austrians, 851; Americans, 687; Mexicans, 650; Slavs, 355; Negroes, 304; English, 297; Hungarians, 245; Japanese, 105; Germans, 79; Poles, 68; Welsh, 68; Scotch, 58; Greeks, 58; Russians, 51; Montenegrins, 29; Swedes, 27; Irish, 26; French, 15; Finlanders, 12; Roumanians, 7; Arabs, 5; Swiss, 1, making a total of 5,626. The proportion of Mexicans—and the term here is applied to Spanish-speaking workers from both sides of the border—was larger than previously because this class of labor had been used as strike breakers during the strike of 1903–4. Doctor Morritt expresses the following unfavorable opinion of these workers: "The Indian and the Mexican are both utterly unadapted to the work of mining. The Mexican can be depended on for a certain amount of surface work, but he can rarely be persuaded to work underground. He is shiftless and lacks ambition, and only in time of strike, when extra inducements are offered in the way of best rooms in the mines, generous weights, donations of liquor on the part of the pit boss, is any underground work to be gotten out of him at all; and even then he is not to be relied upon after he has a few dollars to his credit with which to buy 'Dago Red,' as the cheap adulterated whisky is called."

But there are exceptions. The superintendent of one of the largest camps of this company said that while he did not employ enough Mexicans underground to affect the output of the mine materially, because they could not be relied upon to turn out the same amount every day, he found places for such as wanted to work. Mexicans averaged seventeen to eighteen days in their rooms, where European

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miners averaged twenty-three and twenty-four days. Miners are paid 55 and 60 cents a long ton, mine run, in this district. Six of the best Mexicans earned, upon an average, within a fraction of $55 each during the month of August, 1907, while the six best Italians and Slavs averaged within a fraction of a dollar of $107 each during the same month. It is probable that the Europeans had better rooms, but they had no preference in rates and other conditions of employment. One mine superintendent spoke of the Mexican laborer as filling a peculiar place in the mining field, comparing him with the Italian as follows: "An Italian demands a good job and will work every day. You must show him that he can earn a good wage all the time. He wants to be sure that he will have so much at the end of the week. A Mexican is not particular about the kind of a job he gets, and will not work every day. He doesn't care about knowing how much he will earn the next month. He is willing to shift from job to job, and do one thing one day and another the next, while the Italian doesn't like that. So the Mexicans make good reserve labor, for emergencies and odd jobs. They will do a kind of work it is hard to get other labor to do, because they like to change about and don't want much money; that is, they don't care about saving anything." The manager of the coke ovens at this camp said that among the coke pullers three were Italians for one Mexican, but that among the day labor used around the ovens the proportion was about reversed. He thought Mexicans made good pullers, but they were not sure to be on hand when needed.

Most of the Mexican laborers in this district are American born, and though more intelligent, are less steady than laborers from Old Mexico. The faults that are here described would not be chargeable in the same degree to Mexican peasants who had emigrated to the United States and were far enough from home to feel their dependence upon a regular wage. The local Mexican laborers of Colorado and of New Mexico usually own a cabin and a small piece of land within walking distance of the camp, or within a day's journey, and therefore are more independent of regular wages.

The wages at the coke ovens were recently 80 and 90 cents per oven for pulling and loading on railway car. Levelers and chargers were paid 20 cents per hour; washers, 18½ to 20 cents per hour, and laborers 18½ cents per hour. A labor agent sent 14 immigrant Mexicans to the coke ovens near Trinidad, Colo., the day before his office was visited. They were to receive $1.50 a day and rations.

A third coal mining field is along the Atchison, Topeka and Santa Fe Railway, near Gallup, N. Mex., within a few miles of the Arizona border. Only about 1,000 men are said to be employed in this district, at several mines. A majority are Italians and Slavs, and the prevailing rate is 58 cents a ton, mine run, 5 tons being a good

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eight hours' work. Japanese and Negroes have been employed unsuccessfully. A few Mexicans work underground; and the surface men are mostly New Mexicans and Indians. As miners they are not so good as Italians or Slavs, but equal the Japanese and the Greeks. Only a few Mexicans are employed, and they are not thought to be as good as New Mexicans. The latter are not local residents, but come from other parts of the Territory.

Along the Rio Grande, on both sides of the river near Eagle Pass and Laredo, are mines of soft coal and lignite. Only Mexican miners are employed, though other nationalities have been tried. The reasons for this are the poor quality of the coal, the thin veins in some places, the arid country, and the heat and other climatic conditions, all unfavorable to white miners, and the proximity of large coal mining camps in Mexico employing native labor. About 1,000 men are employed by three companies in the vicinity of Laredo, and the number would be increased to 1,500 were labor obtainable. Workings are shallow and reached by inclines. The roof is bad and requires continuous timbering. The ton rate was not learned, but a manager said that miners could earn $50 gold a month, but that they did not work regularly enough to do this. Near Eagle Pass the coal is better and the vein is worked from a shaft. The vein averages 6 to 8 feet, shooting coal. From 70 to 80 cents (American currency) a ton is paid, and good men can get out 2 tons a day. Labor is not scarce at present, but was before houses were repaired and prices lowered at the commissary. On the Mexican side of the river, in the same field, miners receive $1.25 (silver) a ton, which is said to be the highest rate paid in Mexico.

The Mexican miner has the reputation of being very careless in mines, both in timbering and in the use of powder, yet the Eagle Pass mines report only one fatal accident, in the mine itself, during eleven years of operation. This accident was due to a Mexican miner who entered a heading marked dangerous (skull and cross bones) by the inspector and tried for gas with an open lamp. He and his partner were both killed. In Mexico several serious mining accidents have been caused in this way, though the management had taken precautions to warn men of their danger. At Eagle Pass several Mexican miners were blown up while dividing a keg of powder which they had emptied out upon the floor of a cabin with an open fire in it. The powder looked lumpy, and one man threw a piece into the fire to see if it was good. Such ignorant carelessness is one reason why American miners are unwilling to work in company with Mexicans.

The wages of metal miners in Arizona were given by one mine owner as $2.50, which is double the rate paid a few years ago. In the Patagonia mines, which have always employed Mexicans, miners

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were said to earn $2 to $3 a day. Another mine manager in the same Territory said that when Americans were employed on time wages they were paid $4 in the drifts and $4.75 in the shafts. The latter were usually wet. The Mexican employees were either machine men, who earned $2.50 to $3 a day, or surface men and laborers in the mine, who were paid $2 a day. At the Greene Cananea Copper Company mines at Cananea, Mexico, 40 miles south of the Arizona border, the following wages were paid in 1907 according to a statement by the owners: Mexican miners, $3 a day; founders, in the smelter, $3 to $8 a day; common laborers (pick and shovel men), $2.50, and superior laborers, $3 a day. These wages are in Mexican currency and must be divided by two to give the rate in American money. At Silver City, N. Mex., Mexican miners were said to earn $2 and $3 a day. A mine owner in the same part of the Territory said that he was paying Mexicans, who were doing developing work in a copper mine, $2 a day and rations. He had contracts with New Mexicans to sink a shaft at from $6 to $10 a foot, the rate varying with dimensions of the shaft and the character of the rock. The owner supplied powder and intrusted the work entirely to the men, only measuring off their work before advancing money on their contract. However, as compared with these wages, one Arizona mine owner was looking for labor in the vicinity of El Paso to take to Arizona, expecting to pay but $1.50 a day. Without access to the books of a large number of mines, it would be impossible to estimate with any degree of assurance the average rates paid Mexican miners in these two Territories and the ratio their wages bear to those of white miners. Conditions vary in each mine, according to its remoteness from market, the deepness and danger of the workings, the cost of living, and whether it is worked on a time or contract basis. Futhermore, the actual earnings of Mexicans are affected by the irregularity with which they work.

It is certain that mining labor can not be held for less than $1.50 a day, which is but 25 cents more than the railroads pay for less strenuous work, and it seems reasonable to assume that the Mexicans employed in mining occupations in the Territories do not earn on an average less than $2 a day. This is about 50 cents more than they earn at Cananea, Mexico, where wages are probably as high as at any place in the Republic. In the lead silver mines around Chihuahua, where labor is dear for Mexico, surface men and muckers earn $1.50 to $2 a day. Mexican machine men receive from $2 to $3.50 a day, which is about the upper limit of mine earnings. Men who drill in pairs are paid 25 cents a "cuartilla," which is a trifle over 8 inches. Ten "cuartillas" each is considered a fair day's work. All of these wages and earnings quoted for Chihuahua are in Mexican currency, with a purchasing power about one-half that of American money.

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As one goes south wages lessen. In one of the best mines of the Zacatecas district drillers are paid 85 cents each ($1.70 for the pair) for 1½ meters (59.06 inches), and 1 cent each for every centimeter (0.39 inch) above that. Miners who work regularly at this rate earn $1.50 to $2 a day. Muckers are paid $1 a day, ore sorters 75 cents, and common surface laborers 60 cents. This means from a maximum of $1 down to 30 cents a day in American currency. Sixty miles back from the railroad miners are paid but 75 cents (silver) a day. Ore sorting is an occupation of some importance. It is simply concentrating by hand, and is necessary in a country like Mexico, where ore is still brought to the railway on the backs of burros.

Mexican miners who cross the border from the States of Chihuahua and Sonora are considered a distinct class from the "cholos," or common laborers. But this is a trade distinction, since the miners are often quite as dark—that is, quite as much Indians—as the laborers. Managers and mine superintendents in the United States usually rate the Mexican-born miner very low, while mine employers in Mexico often hold a contrary opinion. One American manager said: "Mexicans have no heads and would be very expensive labor if paid anything like the same wage as whites." They are considered careless timbermen, not to be trusted except under white supervision. An English manager in Mexico said they did good timbering under competent supervision, but were very slow. In some Mexican mines near the border American miners are employed to shoot the blasts, because their better judgment in using powder compensates for the very high wages they are paid. A manager who had used Mexicans in Nevada said: "Mexicans will work in a smaller place than an American. They are good sluice box men and strippers, but you can't trust them, either to work honestly or with high grade ore." Ore stealing is very common among miners in Mexico, and there are buyers—sometimes Americans—in the chief mining centers of that country who make a regular business of purchasing high grade ores in small lots without asking where it came from. A mine owner in New Mexico remarked that Mexicans were often remarkably good judges of the quality and value of an ore. A mine owner in Lower California said his Mexicans were quick to learn, and that some would drill 12 feet a day per man in gneiss. It was remarked by other mine owners that miners in remote parts of the country, uninfluenced by modern ideas, worked harder and did more in a day than Mexicans in the vicinity of large camps and those who had been to the United States. Nevertheless, most testimony as to the effect of emigration upon the labor efficiency of Mexicans was the reverse of this.

One reason why Mexican miners are less esteemed in the United States than in Mexico is that, even assuming their efficiency to increase

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somewhat with emigration, their wage rises in a still higher ratio. North of the border white miners are everywhere preferred on machines. Many Americans are employed as machine men in the country immediately south of the border, where Mexican labor commands high wages, but in Zacatecas, where the experiment was tried with selected American miners who were expert machine men and otherwise satisfactory employees, it was found considerably more economical to use Mexican machine men at the respective wages there prevailing.

American miners usually will not work in company with Mexican miners. One reason, as stated, is that the Mexicans are careless, use powder with poor judgment, and do not pin a mine well, so that where they are employed there is a considerable element of added risk. Another reason is the hostility of miners' unions to the employment of Mexicans as skilled laborers in mines.

The opposition of the unions to Mexicans is due largely to two causes. They are cheap labor, and though their lower wages may not lessen the labor cost of production, on account of their lower efficiency, they constantly threaten the maintenance of the union wage. Also, the Mexicans have been used as strike breakers.

The use of Mexicans to break strikes and to prevent the introduction of the closed shop in mining districts is described in a typical instance—the Colorado coal strike of 1903–4—by a representative of the employers as follows:

> Equally favorable to the operators in Colorado is the presence of the Mexican. In the Eastern States the first effect of a strike is the worst, and its success depends largely upon the suddenness with which men leave. In Colorado it is otherwise. I have pointed out that the Mexican procures his livelihood at the cost of the least exertion. Ordinarily speaking, he can not find employment in the mines so long as more profitable labor is to be had. But in straits the Mexicans are given rooms in the mines. They do not get these at any direct advance in wages, but there are many ways—assignment of the most preferable rooms, liberal weights and measures, and sometimes a free-hand distribution of whisky—whereby the actual wage is increased.
>
> The Mexican thus brought to see that by a few weeks of hard labor in the mines he may earn more than by desultory attention to his goats for many months will regretfully drop the staff and take up the pick until he has perhaps laid up $100. Then feeling rich he will work no longer. The shock of the strike is greatly lessened and its pressure upon the operators postponed until the latter may in some degree forearm themselves and the strength of the strikers is somewhat exhausted. Thus the native Mexican acts as a buffer to the blows of the strikers. The Mexican himself rarely strikes.

Most of the Mexicans above described were born in the United States. They owned little homesteads, and were not forced to work, and they lived about as far north as Mexicans are employed in numbers and where their wage relatively to that of whites is highest.

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In the West and in Mexico the principal industry subsidiary to mining is smelting. Very few Mexicans are employed in the Colorado steel works; but in smelters they have been used at times in that State, and are largely employed nearer the frontier. In Mexico some of the largest plants in the world are run entirely by this labor, under American and European supervision. Those employed around the steel works and smelters in Colorado are chiefly engaged in chopping wood and in hauling fuel. One large smelter had, at the time it was visited, no Mexicans on its pay rolls, though some had been employed occasionally in the past. Most of the work is done by contract, at fixed rates per ton of ore, and neither Mexicans nor Japanese can compete with the physically stronger and more robust Italians and Austrians. Japanese tried unloading ore at this smelter, but they could earn only $1.25 a day, while Austrians working beside them at the same rate per ton were earning $1.75 and over daily. An employment agent in Denver said he had recently filled an order from the Union Pacific Railroad Company with 40 men from Mexico who were to be used at shoveling coal. That work is about the same as unloading ore, but it is probable that the Mexicans were contented with much lower earnings than would satisfy Japanese and Europeans. A smelter engineer in Arizona said that in that Territory Mexicans were employed mostly in small smelters, performing all the common labor for a wage averaging about $2 a day. The large custom smelters employ fewer Mexicans. An eight-hour day is worked, because, though the Mexicans can stand hot work, they can not work long hours in the very hot surroundings of a desert smelter. Another informant mentioned smelters where but three white men were employed—an engineer, an assayer, and a superintendent. At the El Paso smelter, where labor from Mexico is very largely used, men were receiving from $1.10 to $1.25 a day.

In Mexico itself native smelter labor was said to be very satisfactory after it was trained. At Zacatecas laborers were paid 5 and 6 "reales," amounting to 62½ and 75 cents in local currency, or half that amount in American money. At a very large American smelter in Aguas Calientes men were being paid 62½ cents (silver) a day, which was an increase of 25 per cent over the rate paid in the spring of 1907. Besides this, in order to encourage regular work, if a laborer lost but one workday in any month he was paid the extraordinary premium of 50 cents (silver) a day for that month. These laborers were observed lined up on pay day. Several received sums that would indicate that they had earned the premium. They were fairly sturdy and well fed, in marked contrast to the peons who came in to market from the neighboring "haciendas." Yet the smelter workers are themselves peasants and usually leave work in July to put in their crops. There is a constant labor shortage, though the manager said his best laborers did not emigrate.

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LUMBERING AND WOODWORKING.

The lumber industry is not important in the section of the United States where Mexican labor is common. At Albuquerque, N. Mex., and at Flagstaff and a few other places in northern Arizona, there are sawmills of some size, supplied with timber from mountain camps at a considerable distance. The American Lumber Company, in Albuquerque, has about 1,000 employees, of whom something over one-half are Spanish-speaking, though mostly American born. A few of the latter are employed in the camps, but most of them are laborers and lumber pilers at the mills, where they earn from $1.25 to $2 a day. Immigrant Mexicans were to be distinguished from natives, according to the superintendent, only by being slightly slower and duller. They were not considered ideal laborers, but improved and were willing to learn. Young New Mexicans were employed as bench workers and in operating machines in the box factory, where they earned up to $2.75 a day. They were reported to work regularly and to give satisfaction.

At Flagstaff, where some 500 men are employed in mill and camp, a large majority of the laborers are New Mexicans, and give satisfaction. About 20 immigrant Mexicans were employed as tie cutters, earning $2 a day. They are also satisfactory. Mexicans were employed as section men on the logging road.

MISCELLANEOUS OCCUPATIONS.

Some Mexican laborers are located in city colonies, having drifted away from the railroads to engage in various occupations requiring little skill. During the clearing-up operations at San Francisco they worked by the side of Italians and Japanese, sometimes in groups, often scattered among workmen of other nationalities, earning the regulation $2 a day. Contractors in that city spoke of them as less efficient than Italians, but seemed to place them vaguely in the same class. As the demand for unskilled labor lessens they will probably be replaced entirely by Europeans.

In Los Angeles and vicinity Mexicans of California descent and immigrants are employed as builders' helpers and in minor occupations connected with construction. Parties of these laborers were unpacking and passing tile in a large steel office building. Employers say these workers are mainly from Mexico. They carry hods and drive dirt carts. Through the southern counties of Arizona, in the Gadsden Purchase, there has always been a larger Mexican population than in any other parts of the Territory, and here—in such towns as Phoenix and Tucson—the less skilled building trades are largely controlled by workers of this nationality. As at Laredo and at other Mexican-American frontier towns, the better class of these

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workers enter trade unions, or form unions separate from their English-speaking colleagues. In these occupations men earn from $1.50 to $2 a day. At Monterey, Mexico, similar laborers, employed on a large ice plant, were paid but 75 cents (silver) a day. An American manager in Monterey said Mexicans worked fairly well under foremen of their own nationality, but that as soon as they had finished what they were told to do they folded their arms and stood still until they received further instructions.

In southern California and in Texas Mexicans do most of the excavating and road building, and are otherwise employed on public works. In the former State a contractor said Mexicans could drive a two-mule scraper, but that he would not trust them with a four-mule scraper. They were paid $2.25 a day. White laborers were preferred, because they received the same wages, except that the four-mule scraper drivers were paid $2.50 a day. Asphalt and cement workers, except skilled hands, are paid $1.25 a day in Los Angeles. Mexicans accept lower wages in the city, because they can be with their families. The pay rolls of one contracting firm, engaged largely in street grading and in other public works, showed that Mexican laborers were paid from 22½ to 30 cents an hour in the vicinity of the city. In San Antonio, Tex., street laborers are paid $1.25 and $1.50 a day. They are mostly Mexican immigrants or of Mexican descent. A number of Mexicans are employed by the Government upon its irrigation projects in the southwest. They were said to be receiving the same pay as other laborers—that is, from $2 to $2.50 for an eight-hour day—but it was evident from talk with the foremen that where uniform wages are paid, as in this instance, other laborers are much preferred.

In the city colonies of Mexican immigrants, especially in families where children have attended public school, evidences begin to appear of a differentiation of employments, and a rise of the more intelligent to a better class of positions. In Los Angeles immigrant Mexicans are working in slaughterhouses and in meat shops. One boy is foreman of a bed spring factory, receiving $18 a week. A number of girls work in canneries and at packing crackers. One girl is clerk in a 10-cent store that caters to Mexican trade. A few women are said to be employed in clothing factories, though none were actually found in this occupation. At Austin, Tex., a number of Mexican girls work in a candy factory, where they are said to be more regular and to have better morals than white help.

But Mexican women and children do not usually work in factories in the United States. This is partly because husbands and fathers oppose it, having a peasant prejudice to their women leaving home, and it is partly because these women lack the foundations of industrial training. For the same reason Mexicans do not become domestic

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servants. Women of the better laboring class will not leave home, and the immigrant women have so little conception of domestic arrangements in the United States that the task of training them would be too heavy for American housewives. The fairly well-trained servants of Mexico do not emigrate. Even in that country the Chinese are often the only competent and trustworthy servants obtainable by American residents.

CHARACTER, AND COMPARISON WITH OTHER NATIONALITIES.

The Mexican laborer is unambitious, listless, physically weak, irregular, and indolent. On the other hand, he is docile, patient, usually orderly in camp, fairly intelligent under competent supervision, obedient, and cheap. If he were active and ambitious, he would be less tractable and would cost more. His strongest point is his willingness to work for a low wage.

Though Mexicans lack ambition, they are alert in certain ways. In the Colorado beet country they are said to be the first to reach a section where higher wages are paid. "Quick to catch on," was the expression used in characterizing them. A California contractor, who had very broad experience with laborers of this nationality, said: "They have more intelligence than you think at first. They learn quickly, so that they can do anything in asphalt work." Other employers, both in Mexico and in the United States, noted similar qualities in their laborers; the usual opinion, however, is that they are dull.

Though careless in some ways about money, the Mexicans are very tenacious of their rights. Many disputes arise between them and the farmers employing them on contract in the beet fields. Their suspicions of the fairness of their employer seem easily aroused, and they will quit a job at once if they think they are being cheated. One employer said the Mexicans were always trying "to do" their boss, but this opinion of them is not common. Many of them drink to excess, and lose time after a spree; but they never attack a man placed over them, and they settle their rows among themselves.

Ordinarily their credit is poor, and commissary managers complain of losing much money through Mexican patrons. One storekeeper, in a Colorado mining camp, tried the experiment of extending to some of the old settled and more reliable Mexicans credit to the amount of $25 on thirty days' time; but the men slowly fell behind in their accounts and would not pay up, and the experiment was abandoned after six months. This manager said he would trust ten Italians rather than one Mexican. On the other hand, when the payment of a debt depends upon a sentimental obligation,

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or something more than everyday commercial honor, it is generally paid. The assistant general manager of one of the Texas railroads said that he had often loaned a dollar or two to Mexican workmen, who chanced to be stranded in the city, and who had at one time been employed by the road, and that they had never, in a single instance, failed to repay him. In one case a sick man, with a family, on his way back to Mexico borrowed $2, which was given as an act of charity without expectation of its being returned. But a few weeks or months later, when the man was well again and had returned to work, he stepped into an office of the same railroad several hundred miles off, and handed the money to the agent to be forwarded to the lender. Money lenders in Mexico seem to loan money without much security to intending emigrants—though the actual conditions under which these loans are made could not be discovered. But probably in such cases there is some means of exacting payment in case the emigrant ever returns to his home and family.

Mexicans who have families are said generally to be faithful to their marriage relations. Yet this common testimony of employers and foremen and those dealing most with these laborers was directly contradicted by other men in a position to be equally well informed. The devotion of the Mexican laborer to his family while it is with him, and his desire to return to it in Mexico, are everywhere recognized by Americans. The bishop of an American Catholic diocese, himself a Spaniard, said that as a rule the immigrants sent money to their families left in Mexico and ultimately either returned to them or brought them to the United States; but that cases occurred where a man deserted his family in Mexico and took up with some woman of his class in the United States.

Wherever immigrant Mexican laborers are employed in any numbers in the Southwest postmasters reported that they sent money back to Mexico. Usually the postal orders were for small sums, but often they made a respectable total in the aggregate. From Rocky Ford, Colo., some $300 a month is thus sent. By reason of the fact that the laborers there work but for a season, most of them doubtless hoard their earnings (such as they do not spend currently) and carry them back with them on their return. Near Gallup, N. Mex., mine and railroad laborers send money home through the post-office, and from northern Arizona, as an educated Mexican who acted as correspondent for illiterate laborers expressed it, "very much of what they don't spend" is thus sent home. The postmistress at Flagstaff, Ariz., said that making out postal orders for Mexicans formed a considerable part of the work of the office. Some officials, though remarking that the total sum was small, noted it as a new item or a growing item in their post-office transactions. The post-office seems to be used by Mexicans for money transfers the more

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frequently the greater their distance from the border. Those near the frontier, intending to return to Mexico themselves shortly, probably hold their money to carry home in person. A labor agent, dealing with Mexicans on the frontier and speaking Spanish fluently, said that the returning immigrants often had $200 gold in their possession, which is a fortune for a workingman in central Mexico. The editor of a Spanish paper in El Paso, himself a former Mexican official, said that many Mexicans returned, especially from the mining country, with this sum. They either spend it in ostentatious display among their neighbors when they get home and return to the United States penniless the following season, or else buy land and stock. The few thrifty ones probably accumulate enough after a few trips to the north to place themselves above the harder and poorer paid kinds of labor in Mexico. Two men of this character were met at Zacatecas; one had a stall in the market.

People familiar with both races say the Mexicans are thriftier than the Negroes. Some of the Pueblo Indian laborers in the Southwest are said to be savers, and this may be an incipient trait in the Indian stock of the Mexican peon. But many employers in the Southwest and in Mexico say that whisky, gambling, and fine clothes absorb most of the Mexican's surplus earnings. Love of display is a very common trait among them and leads to some desirable results, such as the improvement of the homes among New Mexicans, and probably also among the immigrants. But their lavish expenditure seems to be due partly to actual lack of foresight, to forgetfulness, when they have money, that they will ever again be without it. For instance, when the beet harvesters return to El Paso from Colorado, in the fall, they usually have plenty of money, yet not over 30 per cent of the laborers—by actual count kept at one mill—will take the trouble to form parties of ten, and thus secure a party railway rate to the frontier, which would save each laborer several dollars. This is not due to ignorance—for in the particular instance mentioned the mill manager took special trouble to inform them that they could save this money—but apparently to a desire to show off by traveling independently.

Thrift is an important element in the efficiency of labor; for where it is present the laborer usually works more regularly, dissipates less, and is constantly urgent for higher wages. On the other hand, the thriftless laborer is a good man for emergencies—a short job pleases him as well as a long one—and he will work cheap. If the thrift of the Mexicans increases with experience in the United States, though there is not much reason to expect this in any immediately observable degree, they will lose some of the peculiar qualities that make them desirable to employers at present, but at the same time acquire others that will add to their value in

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a different direction. In the comparisons made by employers and foremen of Mexican with other immigrant labor, the peculiar serviceability of each in a different way was sometimes lost sight of, and the Mexican was judged by the European or Oriental standard or vice versa. This consideration should qualify the following observations:

Different employers in the beet fields, in comparing Mexicans with Japanese, said: "Japanese want better pay, but are quicker and so are as cheap as Mexicans. They get out earlier in the morning." "Our farmers will engage good Mexicans for the following year. They are about equal as workers to Russians and Japanese, but not so intelligent and thrifty. Different nationalities don't work together. Russians and Japanese will observe their contracts better than Mexicans. Mexicans are the best spenders. Russians are desirable savers, because they save to buy farms. The Japanese are bad savers, because they save money to send away." "The Japanese push up wages." (Given as an unfavorable comparison with Mexicans.)

In other employments Mexicans and Japanese were compared as follows: "Old Mexicans are better laborers than Japanese for a large employer because they do not go in gangs, under a head man or agent like the Japanese. [However, in the beet fields they work under "patrones" of their own nationality.] Every Japanese gang is a trade union; they come and quit together. Among the Mexicans one is as good as another, and they will split up and go off singly to different jobs, but don't all quit at once." These observations were repeated in substance by other employers. "Mexicans are cheaper, and in many cases just as good man for man. Japanese now demand at least $2 a day, about the same as a white man, and they are getting $2.25 a day at the tunnel." (This was near Trinidad, Colo.) "We prefer to work Mexicans. Mexicans will work with anybody but Japanese. They hate the Japs. We had a mixed gang recently on a stone crusher, when we were very short of labor, the Mexicans feeding and the Japanese in front of the machine. The Mexicans hustled the Japs so hard that they drove them off the job and we had to substitute Mexicans."

Reference has already been made to the fact that for railroad work Mexicans are preferred in many places to Greeks, and even to Italians. The following are memoranda of conversations with employers and foremen familiar with workers of these nationalties: "On railways Mexicans are better than Greeks and Italians, and next to the American 'hobo.'" "New Mexicans are better laborers than Italians or Greeks." "'Cholos' are generally preferred to Greeks or Japanese, and some prefer them to whites." "Railways prefer Mexicans to Japanese and Europeans because they don't combine." "Mexicans are rapidly displacing Greeks and Japanese in railway

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work in California." "While the Southern Pacific Railway has Mexicans generally on the sections, near El Paso, where there are some dangerous cuts, it employs Italians." "Mexicans do more work per man [on railways] than Greeks and Italians. They are more willing, and if one is discharged the others will not quit."

A railroad manager has been previously quoted as saying that for emergency work Negroes were better than Mexicans, but that for plodding work the latter were to be preferred. Mexicans are considered better cotton pickers, because they will work the season out, while Negroes stop in the midst of a crop to spend their money. Another employer said: "Negroes are better physically, but less diligent, so Mexicans accomplish as much as they." In southern Texas Mexican labor is everywhere preferred to Negro labor, and is supplanting it upon public works in many places, including some of the larger cities along the Gulf coast and in central Texas. An asphalt contractor in Los Angeles said: "'Cholos' are better workers than Japanese, Chinese, or Negroes."

The comparison with the Indian is generally unfavorable to the Mexican. In the beet country the Indian is considered cheaper and more reliable, if not otherwise better labor. An employer said: "Indian boys from 14 to 20 years old, such as we have had here, will do as much as any laborers, Mexican, Russian, or Japanese." A foreman in Arizona, whose statement could not be verified, said: "The Santa Fe paid Navajo Indians $2 a day when it was paying 'cholos' $1.25, because Indians did nearly double the work." At the Gallup (N. Mex.) coal mines it was said: "Navajos are better than Mexican immigrants, and the latter are about as good as the Greeks and Japanese." The Yaqui Indians also are considered good workers. The governor of Arizona said: "The best labor we get from Mexico is the Yaqui Indians. They are more regular and industrious than the other immigrants from that country. They come up here, fraternize with the Mexicans, and then buy arms and go back home to shoot Mexicans." A mine manager in Mexico said: "Mexican labor in Mexico is not as good as Mexican labor in the United States. The best labor we have here (in Sonora) is the Yaqui Indians."

The general relation of Old Mexican to New Mexican or American-born labor of Mexican descent is thus summarized by those familiar with both: "Old Mexicans are increasing (in the Colorado beet fields) relatively to New Mexicans." "From 1900 till 1905 New Mexicans were the chief beet-field workers. Since 1905 Old Mexicans have been supplanting them." "New Mexicans are not employed so much as formerly, because they can get work at home." "When they can make them understand (i. e., speak Spanish or have an interpreter), farmers take Old Mexicans in preference to New Mexicans. The latter are pretty smart and lazy." "The New Mexi-

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cans are at the stage where 'a little learning is a dangerous thing.'" "I have nothing to do with New Mexicans, because they are too smart for me and too vicious." "Texas Mexicans, whom I sometimes employed for ranch (farm) work in Mexico, were better than the natives, because they were more intelligent and knew how to use tools and implements." "New Mexicans make at least double as good coal miners as Old Mexicans." "Section foremen around here prefer New Mexicans to Old Mexicans, because the latter are so slow to understand." "New Mexicans are better than Old Mexicans for lumber yard work, because they are more intelligent." "New Mexicans are better yard men and lumber pilers than white men."

All of these comparisons are understood to apply only to unskilled or semiskilled labor. In any higher class of employment the European would in all cases be preferred.

HOME LIFE AND STANDARD OF LIVING.

The wants of the Mexican peon are hardly more complex than those of the original Indian from whom he is descended. An adobe hut with an earth floor, or even a shelter of branches against the wind, a few pieces of pottery, a serape or a sheepskin to lie on at night and to keep out the keener blasts by day, a modicum of cotton clothing, sandals, and a cheap straw sombrero are a sufficient domestic equipment. Corn, beans, and chilis are the staples of his coarse and simple diet. Equally cheap pulque or its more potent and dangerous distillation, mescal, supplies the stimulant demanded by the crudeness of his food, and card playing affords the diversion needed to break the monotony of his life.

In New Mexico one can observe a more advanced stage in the transformation from this simple and unprogressive condition than is to be seen as yet in Mexico itself. For the same influences are at work upon the Pueblo-Aztec races in both republics, though they have come a little earlier in the north. Thirty years ago the New Mexican villager had no use for money. There was not even an iron hinge in his hut. His pottery was fashioned by his own hands, as was the rude plow with which he scratched a bit of valley land. Clothing was often woven by the family from the wool of his own flocks. Old settlers remember when jury fees were almost the only money countrymen ever saw.

Then came the railroad, along which circulated dollars, as well as other commodities new to the country. The peasant felt the pressure of novel needs about the time he found a market for his labor. Gradually his standard of living rose. Now, except in remote localities, the adobe hut, to which the American-born Mexican wisely clings, usually contains an iron bed, frequently a good cooking range, and not

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unusually other furniture. His windows are glazed, cheap prints adorn the walls, and a white spread sets forth the importance of the bed. These adobe dwellings are usually neat and clean, with an orderliness not always to be found in the homes of immigrant laborers from Europe.

The New Mexican no longer is village shy, averse to leaving the neighborhood where he was born and where he can always find shelter and food among his friends. He makes seasonal migrations to distant parts of the west in search of work, often leaving his family behind him to attend to the crop in his absence. A Las Vegas (N. Mex.) merchant received answers to an advertisement in a local Spanish paper from Texas, Arizona, California, Wyoming, and Colorado, so widely had the resident Mexicans scattered to find employment upon the ranches and the railroads. One little village had 70 men absent, mostly in Utah as sheep herders. As a rule the hamlets in the irrigated bottoms do not afford work for wages, so this migration of the Spanish-speaking people within the United States is a migration for money—not the nomadic restlessness of an old Indian stock, but a definite seeking after better economic conditions—after the means to supply new needs.

Although the women stay at home and do not themselves become earners, they appear to be the spenders, or the ones for whom money is first and chiefly spent. A Mexican laborer will dress his wife and children expensively while he wears rags himself. Social emulation or some kindred sentiment seems to account for the slow but steady improvement in the New Mexican home. In fact, showy furniture frequently stands as a symbol of means rather than of use. A well draped bed will occupy a prominent place in an apartment where the family sleeps on the floor. And these new standards of style and ostensible comfort are set by the women rather than by the men.

The immigrant from Old Mexico is passing along the same road as his brother north of the line, only he is a little behind. He dons American working clothes when he crosses the border; and if he goes into a boarding camp becomes accustomed to a dietary scale far above that to which he was accustomed at home. It is doubtful if the fresh-meat-eating laborer ever returns willingly to a vegetable diet. Some Mexicans in Texas seem to appreciate the United States chiefly as a place where there is more to eat than in Mexico. In migrating to the United States the Mexican loosens the home tie more than does the New Mexican in his migrations; for he goes to a greater distance and to a different country. Therefore he breaks away more completely from the system of communal dependence common to the Spanish-speaking peasantry of both countries, where the lazy man and the man out of work live off their relatives and neighbors, so that the sense of individual economic responsibility is never developed. The com-

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munal standard of living is apt to be low, because emulative influences are absent. In the United States, for instance, the standard of living constantly rises, partly because every man wants to excel or at least equal his neighbor in home surroundings. And other things being the same, the standard of living rises most rapidly where there is the most social contact, as in towns and in cities, provided each family unit is upon an independent basis. But where the man who increases his family expenditure, at once, by this evidence of prosperity, becomes the prey of all his poorer relatives and connections, and even neighbors, who swarm in and eat up his surplus substance, obviously there can be little progress, though there is a comfortable condition of equality among all members of the community. This was the condition of the Mexican villagers. Custom made the more industrious and efficient the victims of the lazy and inefficient. There was no incentive to accumulate. Society was reduced to a subsistence basis.

With emigration the communal unit is broken up, and there is an opportunity to accumulate and enjoy the fruit of this accumulation. The conditions under which the Mexican laborer in the United States works usually prevent his having a home; so he does not buy furniture. But he spends liberally for clothing, and if his family accompanies him, provides well for his wife and children. He thus accustoms himself to things he has not heretofore enjoyed, and carries the taste for these things back to Mexico. New demands for American manufactures grow up in Mexico where the returned emigrant has settled, and trade follows in the wake of retreating labor.

It is the general opinion that Mexican immigrants eat better and more varied food in the United States than at home, but their diet in the United States is so different under different conditions that a safe conclusion can not be drawn from observing isolated cases. A person who had lived among Mexicans in Mexico and in Colorado said: "Both immigrants and American-born Mexicans eat chilis and beans and jerk their meat. But in Old Mexico people have a greater variety of food, because it is so easily procured." This applies especially to fruits and to vegetables, which are fairly abundant and varied, though of poor quality, at least in the markets of the larger provincial towns of Mexico. At a Colorado coal mine store a typical bill of a New Mexican was 4 sacks of flour, Mexican beans, canned goods (tomatoes, corn, and peas), a 15-pound bucket of jelly, 20 pounds of lard, chilis, corn meal, and about $3 worth of fresh boiling beef and bacon. This represents about the best dietary scale of Spanish-speaking laborers, where they board themselves. Some items are omitted or were obtained elsewhere. Compared with this is the following weekly ration of a "family"(a) on a plantation in the extreme southern portion of Mexico, where wages are high for

[a] A man, wife, and children too young to work.

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the Republic and labor scarce: 1½ kilos (3.3 pounds) beans, 1 kilo (2.2 pounds) rice, 600 grams (1.3 pounds) coffee, ½ kilo (1.1 pounds) salt, 1 kilo (2.2 pounds) brown sugar, 3 kilos (6.6 pounds) meat, one-half bottle lard, one-half bottle kerosene. At Flagstaff, Ariz., a Mexican said that men boarding themselves paid $4 or $5 a month for a house, usually occupied by two or more, and bought flour, beans, sugar, and coffee, but no meat and very little of other provisions. At a railway store in California immigrant Mexicans were buying bacon, ham, flour, beans, and some canned goods. Where they are boarded, as remarked elsewhere, they eat a great deal of fresh meat. One contractor said of his Old Mexicans: "They gorge themselves on meat."

A merchant dealing with both New Mexicans and immigrant Mexicans said: "Mexicans born in this country are usually neat about their homes and buy things to make them comfortable. They will own a $35 bed, though they sleep out of doors in summer. I sell on an average one good kitchen range a month to Mexicans in this community of some 500 people. They have crayon enlargements in their houses. They don't use much table linen; they use oilcloth. They like gaudily colored table covers and pottery ornaments." Old Mexicans buy a cheaper quality of goods and in smaller quantities than New Mexicans; and all Mexicans, though better buyers, use cheaper articles than Italians, and buy them with less discrimination. Italians will pay 40 cents a pound for Edam cheese, and correspondingly higher prices for the best imported olive oil and macaroni, if the articles are really as represented, but Mexicans buy better clothing, especially for their women and children. Young Americans of Mexican descent buy tailor-made clothing, but older New Mexicans and immigrants will seldom pay more than $10 for a ready-made suit. The wives of Mexican miners and laborers will buy more expensive hats and shoes than American women of a much better position in life. Sewing machines have found their way into Mexican homes throughout the Southwest. The returning immigrant often invests a considerable share of his savings in attire for himself and family before reaching home.

EMIGRATION AND LABOR EFFICIENCY.

The new sense of self-dependence created by migration is said to be both a moral and an industrial stimulus to the Mexican, and does not leave him even when he returns to his own country. Several employers in Mexico expressed, independently of each other, the opinion that the laborer who had been to the United States was a better worker than the one who had never left home. Some thought that the old-time peon, who had never left his village, was more tractable and could be driven more; but that the laborer educated by

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travel across the border had more initiative and intelligence, and more need for money, so that his real efficiency was higher, though his habits were more irregular. The testimony of employers who had had an opportunity to observe labor in both countries, was unanimous that Mexicans worked better in the United States than in Mexico; that they learned to direct their work more intelligently, worked more days a month, and worked with more vigor. This was attributed partly to American superintendence, partly to higher wages and better food, and partly to the fact that the Mexican came to the United States with the definite object of saving money to carry back home, and gave his attention to that one thing.

One railway manager qualified his opinion of the influence of emigration upon the labor efficiency of Mexicans as follows: "Their efficiency is not increased by higher wages. They do not do so much as five years ago. But those who have been in the United States are in some respects cheaper, because they need less supervision." Another employer, with more men in his service, summed up the matter by saying of laborers who had come back to Mexico to work, after being in the United States: "We get more service for more wages."

The general educational effect of travel upon the Mexican peons is probably wholesome. They learn to do new kinds of work, under new conditions. They see different ways of living and acquire new wants. They begin to have a vague ambition for social and economic betterment. It is so usual in Mexico to speak of the Indian laborer as absolutely without ambition, that to attribute to him this quality marks a man in common opinion as a theorist. But the very movement of this labor northward is a proof of ambition. These workers are not forced from their homes—they leave against opposition of their old employers, those whom they have been taught to respect and obey. Sometimes they leave against the will of the priest as well as of the "patron;" for there is often solidarity of interest between the two in rural parishes. The attraction that overcomes this opposition is therefore a strong one—and it is none other than the motive that sets the European immigrant upon his way across the sea—to earn more money and to live better. Some educated Mexicans say that the laborers of their country are beginning to be restless under the old caste inferiority, to which they have submitted from before the Conquest; that doctrines of equality, but half comprehended, are awakening new ideas among the peasantry, and that the movement among them to the north is partly a groping for an opportunity to rise out of their hereditary condition. A mere grain of truth may be at the bottom of this opinion, but it is mostly the idealism of educated social optimists, read into the extremely simple and practical mind of the Indian, who aspires mostly for very concrete things. The peon immigrant has an ambition; but it is limited to the few dollars which he

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can carry back to his family and often dissipate in gorgeous expenditure. Still, this ambition is better than none at all; and it results in labor, which is discipline, and in saving, which is a still higher and less familiar discipline to these people. Ultimately it brings about a higher standard of living, which is the basis for social aspirations, such as overhopeful Mexicans already feign to discover among their peon classes.

This primary desire for money, even if the money is to be spent unwisely, makes the Mexican a better worker. His efficiency as a laborer is rising slowly to the demands of the gold-paying employer in the United States. As he acquires more varied experience, his initiative and adaptability increase. When it is considered that he is the product of unnumbered generations of training in a single occupation—in the simplest of all labor, primitive and unprogressive agriculture—it is not to be expected that he should respond readily to all the varied demands of modern industry. The important point is that he improves, "catches on," as the foremen say.

SOCIAL CONDITION OF MEXICANS IN THE UNITED STATES.

The Spanish-speaking population of the United States has not increased rapidly, and in localities where it is brought into close competition with other races appears to be decreasing. But the population of Mexico has more than doubled within one hundred years, without appreciable immigration. The number of inhabitants in the Republic at present probably exceeds 15,000,000. The race has not been as prolific in Mexico as either the white or the black race in the United States. This has probably been due not so much to a lower birth rate as to a higher death rate, caused by poorer sanitary conditions and less nourishing food. Mexicans are fatalists in case of epidemics, exposing themselves to contagion without regard to consequences. They are said to be susceptible to tuberculosis. While they do not impress one as able to resist the stress of modern urban life, they literally swarm in the crowded, insanitary courts of the City of Mexico.

Physicians familiar with Mexican immigrants in the United States usually speak of them as poorly nourished, with less vigor and resistance to disease than Europeans, Negroes, or Americans. A mine physician said: "Mexicans in this country have fairly large families, but the population resident here increases but slowly, if at all, on account of the low resistance powers of the race."[1] Parasitic anæmia, or the "hook worm," is not the cause of this, apparently, since the disease is unknown in many parts of Mexico and not common among the immigrants. There are a few cases in coal mines near the border, all popularly supposed to be brought from a single mining district of Mexico, and to be due to the habit of earth-eating said to prevail

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in that locality. Speaking of Mexican communities in Colorado, a person familiar with them said: "New Mexicans have large families, but seem to be dying out; and the Mexican population of Pueblo and Trinidad appears to be decreasing, and would decrease more were it not for immigration from the south." There are no statistics to show whether or not this surmise is correct. The American population of these western towns and cities is growing so rapidly, and the country is filling up so fast with European immigrants, that the so-called "Mexican" population, while really growing, may by contrast appear to be lessening; also, the New Mexicans are more widely distributed than formerly, entering new occupations and old occupations in a country that was entirely without settlers a few years ago. Therefore a local decrease might accompany a general increase throughout the State, or in neighboring States. At one place in Colorado an election official said that the poll books showed a decreasing Mexican population. But such evidence has no value for general purposes. In Los Angeles immigrant Mexicans are said to be more robust than natives of Mexican descent, and to be displacing them. The impression of Americans here and in the Territories accords with the opinions given from Colorado, that the American-born Mexicans are a decadent race, yielding before the physically more vigorous immigrants from Europe and the East. One cause given for the decline of the New Mexican population is inbreeding—intermarriage for generations among the few families of a village, said to result in stunting and deformities and in a general decrease of virility.

Los Angeles has probably the largest urban colony of immigrant Mexicans in the United States. The total Spanish-speaking population of the city is said not to be increasing, but natives are being supplanted by immigrants, so that in a district in the old Spanish town, where there are still many hundreds of Mexicans, a social settlement worker knew of but four families that were born in this country. These people live in courts and in alleys, into which open one-story huts having one or two rooms, built of wood or brick and adobe, weatherproof, but ill-lighted, unclean, unwholesome, and hardly to be tolerated by the poorest except in the sunny and warm California climate. Not long ago a physician found 23 Mexicans sleeping in one small room in this district, and another was added to the number before he left. These courts harbor not only Mexicans, but Negroes and Slavs as well. Families of different race and nationality occupy adjoining tenements. There is nothing to distinguish the house of one from the other, except that a box of flowers occasionally is seen in front of the Mexican quarters. Single-room huts rent for $3 a month, and this rate per room is charged for larger tenements. On account of a recent tenement house ordinance in Los

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Angeles the condition of these courts had improved somewhat when they were visited, in the autumn of 1907. Outside water taps and closets—apparently serving an entire court—with sewer connection had been installed.

Austin and San Antonio, Tex., have large colonies of immigrant Mexicans, which are undoubtedly growing rapidly, and not, like that of Los Angeles, about stationary in total population. But housing conditions are better, partly because land values are lower and there is less necessity for crowding.

Los Angeles is a native American city, settled mostly by people from the Eastern States. Of a total public school enrollment of 42,260 but 2,046 are foreign-born. Of these foreign-born children, 938 are natives of Mexico. The last census statistics are already too old to show the relative numbers of Mexicans and other foreigners in the city, but these figures are thought by the school authorities to indicate that the school attendance of Mexicans is relatively as large as that of other nationalities.

The Mexicans of San Antonio show an interest in the public schools and the attendance is rapidly increasing. In fact the authorities find it difficult to provide adequate accommodations in the Mexican quarter of the city. In one district, where seven-eighths of the enrollment is Mexican, within five years an eight-room building has been increased to sixteen rooms and a seven-room building built in a different part of the district. Parents show great interest in the schools and a Mexican merchant presented a bell to one of the buildings at the time of its completion. There is usually a Mexican member—an American-born citizen of Mexican descent—on the school board to represent the Spanish-speaking people of the city. All instruction is in English and the children are taught to salute the flag. American parents send their children to the same schools with Mexican children. The attitude of the people of the city toward Mexican children in the schools was thus explicitly described by an educational officer: "The citizens of San Antonio want the Mexican children to have the same advantages as their own in the public schools for four reasons: (1) From humanitarian considerations they want to raise the Mexican population and give it a better chance in life; (2) from political considerations they want to satisfy the Mexican voters; (3) many business men see a practical advantage in having their children—more especially boys—associate with Mexican children in school and learn their character, because they will have to deal with them in after life; (4) we all want to keep the Mexican population contented, so more Mexican labor will immigrate to this country." In this city the testimony was that Mexican children were well behaved in school, and that they were bright in the primary grades and in the manual training departments, but that they entered later

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and left earlier than American children. It was pointed out that the adult Mexican population of Texas and of the Territories had never enjoyed public school advantages, and so the present generation of children grows up in ignorant homes. But this will not be true of the next generation.

In Los Angeles few Mexican pupils remain longer than through the second grade, which gives them the mere elements of reading and writing; but it takes them longer than American children to advance this far, because they have to learn English. When placed in an ungraded room as an experiment some Mexican children made more progress. Of course there are exceptional cases where children pass beyond the primary grades; and three Mexicans of a better class were attending the polytechnic high school. The children are reported to be tractable and to like going to school. They give no trouble, and their only difficulty comes from the aggressions of a rougher class of white pupils. The girls are said to be moral—better safeguarded either by principle or by home discipline than the lower class of white girls. Mexican children are rather studious by nature, but those in Los Angeles are hampered by poor home surroundings. Partly from lack of home conveniences for washing, the children are apt to come to school dirty. After school baths were installed in one building, there was much improvement in this respect. But Mexicans are prejudiced against water, believing that washing causes fever. After their children have been vaccinated Mexican parents will keep them away from water for weeks, though the parents have superstitious faith in the vaccination itself, as a sort of mystic rite. But it is easier for school authorities to enforce some sort of home hygiene for these pupils, because the Mexicans have much respect for authority and make an attempt to follow official directions.

Irregular attendance retards the progress of Mexican pupils. Boys are sent on errands, and usually have to provide the family with fuel, which they pick up in the streets and around new buildings. Children of both sexes are often absent on feast days and on holy days. Though children are sent to church on these occasions, Mexican parents usually patronize public rather than parochial schools. This does not seem to be from motives of economy; for they make sacrifices to provide their children with text-books, and will not appeal to the authorities for free books, though these can be obtained where parents are themselves unable to provide them. In this matter Mexicans are in strong contrast with Italians, who try to get text-books from the school board after they are well-to-do and taxpayers on city property. A Mexican family almost in distress prefers not to make this appeal, but manages in some way to obtain money for necessary school expenses.

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Mexicans excel in design and in the manual arts. At the College Settlement, a social betterment center in a quarter of Los Angeles having many Mexican immigrants, children of that nationality show special skill in tile modeling and in carving blocks of original design for printing patterns on cloth. Teachers say their work is equal to or better than that of pupils in the technical high school.

Mexican boys are not fond of athletic sports, and as a race these people are not aggressive. At a rummage sale the Mexicans stood back while Italians and other Europeans crowded forward and got all the good bargains. Likewise, when a colony of Italians settles in a quarter formerly occupied by Mexicans, the latter quietly move out to a less crowded locality. Sometimes they buy cheap suburban lots on installments, and move their shacks to these places, or buy second-hand building materials where old tenements—frequently condemned—are being torn down, from which they erect rude shelters for their families. In this, as in other ways, the Mexican shows the retiring traits of the Indian and the countryman, even after several years' experience with city life.

Social workers with experience among different nationalities, in Los Angeles and elsewhere, think that there is less illiteracy among the Mexican immigrants than among the Slavs. Superficial observers commonly assume that a knowledge of reading and of writing is as rare among the former as a knowledge of English. This is not entirely true. Several pay rolls of unskilled Mexican laborers were seen, which indicated that from one-half to three-fourths of these workers could at least sign their names. A Spanish-speaking American labor agent in El Paso estimated that 10 per cent of the immigrants could read and write. One old laborer in Los Angeles, who was signing a pay roll, said his children had taught him to write, adding in Spanish: "I'll never go back to Old Mexico, because I have five children in the public school." Wherever there are large Mexican labor camps postmasters report that a large number of letters are sent to Mexico. Though many of these are written by some local "patron," or headman, yet this is by no means always the case. In several instances immigrants passing through El Paso showed letters from a brother or other relative in the United States. A number of Mexican men attend night school in Los Angeles.

The Mexicans are sympathetic—generous not only to their own people, but to those of another nationality in time of trouble. For this reason they seldom become dependent upon public charity. Americans in parts of the country where Mexicans are numerous frequently observed: "There are no Mexican tramps." By this it is not meant that there are not many Mexican laborers traveling on foot from place to place, but these laborers are so in fact as well as name, and seldom apply for assistance except among their own people. At

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the time of the San Francisco earthquake, according to settlement workers in Los Angeles, when there was a call for help in making clothing and furnishing other supplies, the Mexican mothers turned out, and in their small way gave more assistance than any other foreigners.

The professional criminal element among Mexicans in the United States appears to be small, but there is a considerable number of occasional criminals. Most arrests are caused by cheap whisky or mescal. The Mexican is not often a sot, but many Mexicans are inclined to short, sharp, periodic sprees. Along the frontier resides a number of parasitic Mexicans, who live off the vices of their more industrious countrymen and the lower class of Americans. This is a disagreeable and at times a dangerous element. Gambling is its main profession. There are so-called "American" towns within the frontier district where public opinion is as decidedly against Mexican immigration as it is against Negro immigration in some white sections of the South. Where there is this opposition to the Mexican, it is usually to the Mexican who becomes a resident rather than to the transient laborer. And it is this resident class that provides most of the criminals and semicriminals.

In 1906 the penal and charitable institutions of Arizona and of New Mexico, not counting county institutions, contained 773 American citizens, 382 Mexican citizens, and 456 persons of other foreign nationalities, while the nationalities of 19 were unknown. In county jails visited a large per cent of the inmates were obviously of Mexican blood, on whichever side the border they might have been born. But in these localities the same predominance of Mexican blood was also obvious outside the jail.

SENTIMENT AND RACE PREJUDICE.

Organized labor, and white workers in general, do not appear to be opposed to Mexicans in the same way that they are to Orientals. There are two main reasons for this; the Mexican immigrant does not compete in occupations which the white worker greatly cares to enter, and he is regarded as something of an American, with more moral right in this country than the Asiatic. One labor editor said: "The Mexicans don't trouble us much, and are not likely to do so unless we have bad times. Then it may be a bad thing to have the country filled up with cheap labor. They can't do white man's work. Besides they were born in this country, or pretty nearly in this country, and have more right to be here than these Japanese and Italians and Greeks." One candid American mechanic said: "They will never pay a Mexican what he's really worth compared with a white man. I know a Mexican that's the best blacksmith I ever knew. He has made some of the best tools I ever used. But they pay him $1.50 a

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day as a helper, working under an American blacksmith who gets $7 a day." Another workingman said: "The Mexican is all right in his place, and he's not so likely to get out of his place as a Japanese or a Negro." The fact that the Mexican is not socially or industrially ambitious, like European and Asiatic immigrants, counts very much in his favor with white workers.

The race sentiment of Americans toward Mexicans is, like most race sentiment, peculiar and illogical. There is nothing of that stern race consciousness that marks the attitude of the white man in the South toward the Negro. There is more of the tolerance with which Americans have traditionally regarded the Indians. Yet a Mexican can fraternize with Negroes and not lose caste, as would a white man. Negro foremen are employed in Mexican coal mines, directing gangs of Mexican miners. The American Negro considers himself above the Mexican, and yet the latter receives more social recognition from the white man. Perhaps the existence of an upper class in Mexico, distinct from the laboring class and equal socially to Americans, gives even the laborer a better standing in this country. Mexican immigrants ride in white cars in Texas, and might eat at the same table with Americans. Practically there is little social intermingling. Intermarriage is rare, and when it occurs seems to be a subject for apology. This is true even of Europeans. A person familiar with a large mining district, where hundreds of Italians and Mexicans were employed, knew of but a single case where an Italian had married a Mexican. The Mexican does not put himself forward, or seek white society. He observes his own canons of reserve and dignity, which are never offensive.

In Colorado an American said: "There is less race prejudice against an Indian than against a Mexican, and less against a Mexican than against a Negro." This about expresses the situation in the West; but in Texas, where people are more familiar with Mexicans, and a larger proportion of them are residents of the better class, the Mexicans as a body socially far outrank Indians or Negroes. The gradation, from those who associate on terms of equality with Americans to the peon, is so gradual that a race distinction as such hardly exists; and though the preponderant Indian blood of most recent Mexican immigrants can not be dismissed from a consideration of the effect of this immigration, it has not as yet created a race question along our southern frontier.

The economic race contest is not so much between the Mexican and the Negro or the American as between the Mexican and the other nationalities mentioned previously—Italians, Greeks, and Japanese. Japanese compete with Negroes on the Pacific coast in what are called "easy jobs," such as hotel waiters and porters, bootblacks, and servants of different kinds. Mexicans have never entered these

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occupations, though a few are employed as coachmen. In Mexico it has sometimes been necessary to place Chinese laborers together in a mine entirely separate from the Mexicans.

The attitude of Americans of Mexican descent toward immigrants from Mexico seems to be friendly, except where there is direct competition between the two. In Colorado the former regard the latter as interlopers, though they are not actively hostile to them. New Mexicans complain that the immigrants can work cheaper, because they have no families with them. The New Mexican is different from the Old Mexican, in that he sometimes objects to working with Negroes. Another evidence of nascent social consciousness is that he considers himself very much above the immigrant, and does not want to be confounded with him in public opinion. This sentiment is observed in parts of New Mexico where labor is so scarce that there is no opposition by the natives to immigration from Mexico on economic grounds. In Texas, where there are labor organizations among resident Mexicans, the latter oppose an inflow of immigrants likely to lower wages; and in some cases they have lodged complaints of alleged violations of the contract labor law.

SOME EFFECTS IN MEXICO.

Incidentally the effects upon Old Mexico of Mexican emigration to the United States have been referred to in treating of the influence of emigration upon the laborer. But there remain to be pointed out some of the economic and social effects felt by that country as a whole.

Labor is scarce in Mexico; that is, not adequate to the demand of the country's expanding industries. In spite of the cry for more labor in the United States in the summer of 1907, Mexican immigrants were being shipped back to the State of Sonora from El Paso at a wage equal to that they would be paid on American railways near the frontier. The Mexican newspapers are filled with discussions of the labor shortage, and contain many dispatches telling of crops unharvested or railways and public works delayed because of the impossibility of securing workers. These reports are from all parts of the country. The authorities in some of the central States at times suspend entirely the right to hire laborers within their boundaries for work in other States. This was done in Querétaro in July, 1907, and in October of the same year a similar provision was revoked in Zacatecas.

Therefore the emigration to the United States, though it withdraws from the labor market but a small fraction of the total supply, may have a decided influence upon wages. Not only does it make the existing shortage more acute, but the influence of returning emigrants is to educate local labor to higher wage demands. An official of a large employing corporation in Mexico, himself an American, said: "The

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effect of emigration will finally be to make our wages as high as those in the north. To retain labor so far as we can in the southern portion of the Republic we and other employers of labor have had to advance wages considerably."

This rise in wages exceeds in ratio, to the rate previously paid, the rise of wages in the United States. The increase is not to be attributed solely to emigration. It is perhaps as largely due to mining development, to railway building, and to other local demands for workers. But the movement of labor northward is more dramatic and obvious than its silent absorption by domestic industries, and is therefore given relatively more importance in common opinion.

Within a few years railways have raised the rate of pay for unskilled labor from 50 cents to 62½ cents (Mexican) in the vicinities of the City of Mexico, Guadalajara, and Aguas Calientes. These are the cheap labor districts of the Republic. A railroad contractor, who was employing several thousand men on construction work on the west coast, said that he was paying common labor as high as $1.25 (Mexican) a day, where he had been paying 50 cents (Mexican) five years ago. This contractor has imported Asiatics, but prefers Mexicans when they can be obtained.

Wages are much lower away from the railways, and even upon railways not affording direct connection with the north. While skilled miners earn $1.50 (Mexican) a day, according to their employers, around Zacetecas, they are paid but 75 cents (Mexican) a day 60 miles distant in the interior. As recently as 1906, upon the east coast north of Tampico, in country not yet connected with Monterey and Laredo, laborers employed in railway construction were paid but 40 and 50 cents (20 and 25 cents United States currency) a day. This was about the plantation rate. Immigrants at El Paso often reported that their wages on the hacienda where they had been employed were "dos reales" (equivalent to 12½ cents in American money) a day, and this sum was often received in supplies. Five years ago farm laborers in the vicinity of Monterey, within a few hours' ride from the Texas border, were paid a conventional rate of 40 cents (silver) a day. In 1907, even as far south as Aguas Calientes, at least one large estate owner was reported to be paying 60 cents (silver) a day for farm hands. This wage was probably exceptional, since it was paid by an unusually progressive proprietor, who had grappled with the problem of labor scarcity in an intelligent way and was experimenting with steam plows and other modern agricultural implements. As a rule farm wages rise more slowly than those of unskilled labor in other industries, and this rule applies with the more force in Mexico on account of peonage and the patriarchal organization of agriculture. In fact, the "hacendados" are reported to make little effort to keep their labor in face of higher wages elsewhere,

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except by preventing open recruiting in their vicinity. Wages are so much a matter of custom in Mexico that to change them is like amending the constitution in another country. So cases are cited where large landowners, formerly rated very wealthy and accustomed to a liberal scale of living, are on the verge of bankruptcy because the labor has drifted away, rendering their estates unproductive. Entire villages have migrated to other parts of Mexico, where employment has been found in the mines or on the railways, or have gone to the United States. This conventional wage rate is uneconomic and unjust to the more industrious workers. An American agricultural expert, who was employed to manage a large "hacienda" in Mexico during the introduction of citrus fruits as a main crop, said that when he first went on the place every workman was credited with 40 cents (20 cents United States currency) a day, without regard for his efficiency and industry. Some men were good workers, others simply loafed and talked, but each received the same pay at the end of the month. When the new manager began to discriminate in wages and discharge the loafers, it was at first considered a cruel and unjust innovation, but ultimately the men who really cared to work saw the advantage of the new system, and much more was accomplished by a few well-paid laborers than had formerly been accomplished by many half-paid "peones."

Ultimately, perhaps, labor scarcity will force most large proprietors to adopt the same system. Many intelligent Mexicans consider that before this happens the large estates will be broken up and the peon become a true peasant proprietor. This is regarded by many liberal-minded people as a most desirable outcome of present conditions, and there are some who welcome the emigration to the United States for this reason.

The rise of wages and lack of labor in Mexico are being met by other measures in which the United States is not unconcerned. Large employers, especially mining companies and railways—but also planters, more particularly in the tropical portions of the Republic—are importing many thousand Chinese and Japanese. There is no effective political opposition to this immigration, and very little criticism of the policy of importing alien labor of another race upon civic or upon social grounds. If the Indian has any sentiment with regard to the question it is unexpressed. Wages are traditionally low in Mexico, and in the face of a large immigration they would probably resume their former level, thus checking the inflow of foreign labor. Other things being equal, native labor is preferred to Asiatic. At the rubber growers' convention in Mexico, in October, 1907, the discussion brought out clearly that Mexican labor was better than Japanese in this industry. After several years' experience, native mining labor is given the preference to imported. A large railway contractor expressed the same preference after

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equally extensive experience. All this means, in a word, that Mexican labor is cheaper than Asiatic when it can be obtained. Meantime, if the economic status of the native laborer improves, there will probably come an increase in his intelligence and in his political force, and with it, awakened opposition and power to resist the influx of Orientals.

No very definite effects of their experience in the United States, upon the social ideals of the laborers returning to Mexico, is as yet reported. There are some labor organizations in the latter country, but mostly among a class of workers that does not emigrate. The Government supervises the relations of employers and employees somewhat strictly. During the cotton operatives' strike in 1906, and the more recent mining labor difficulties at Cananea, near the American frontier in northern Sonora, the authorities intervened so sternly as to repress disorder and force the men back to work at the old terms. This intervention was partly to prevent an opportunity for disaffected political elements to take advantage of the crisis. But when there was talk of a strike on one of the large railway systems, the authorities, after an investigation, decided that some of the demands of the employees were just and directed that they be granted. The essence of these later difficulties has been the demand of Mexicans that they be paid the same wage as Americans for the same work; and the Government supports this contention when convinced that Mexican labor does render the same service; but as decidedly rejects it when equal efficiency is not shown. The Mexican laborer who emigrates to the United States usually comes from the agricultural classes, ignorant of the labor movement, and his work in this country does not bring him in contact with trade unionism except at the mines, where he finds it either arrayed against him or apathetic to his interests. In any case, no effort has been made by American unionists to organize the Mexicans, or to dispose them favorably toward labor organizations. An exception to this attitude is found when American-born Mexicans are numerous in any trade. At Tuscon, Ariz., the builders' helpers, mostly or entirely Spanish speaking, have a union, and at Laredo, Tex., there is a labor paper published in Spanish, and an active branch of the American Federation of Labor largely composed of Mexican or Mexican-American members. During the coal strike in Colorado in 1903–4, when Mexicans were employed as strike breakers, they would join the union when urged, and remained faithful to the labor cause so long as they were paid strike benefits. A small income without work seems much better to these people than a large income with work. Yet nearly all the Mexicans engaged in this disturbance, either as union men or as strike breakers, were American born.

If labor organization in Mexico is influenced by returning emigrants to the United States it seems likely that the emigrants will have

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received their new ideas indirectly through these Spanish-speaking unions of workers on the American side of the border rather than directly from the organizers and leaders of the labor movement in Mexico.

Among the Latin-American people more than among Americans labor agitation is apt to end in political agitation and, as already suggested, the Government of Mexico, with this fear in view, keeps a close watch over the incipient enterprises of labor reformers. Conditions are not favorable in Mexico to a socialist propaganda. Mexican labor has not yet evolved to that peculiar kind of class consciousness that makes the mind receptive to socialist theories. The masses are ready, perhaps, to adopt any programme handed out to them by a vigorous and ready spoken leader; but they would adopt it on authority, not as a personal conviction, and desert it with perfect unconcern as soon as the leader had fallen.

Therefore, because their contact with American workers is purely one of locality, not of intellectual sympathy, and because they are as yet a people with but rudimentary social experience, the emigrants from Mexico do not carry home with them a burden of new thoughts and ideals likely to revolutionize the intellectual condition of native workers.

In time, of course, if this current of labor continues to flow to and fro between Mexico and the United States social ideas gathered from industrial surroundings in the latter country will begin to permeate the thought of the working classes south of the border. But this process promises at present to be so slow as to be negligible in a study of existing conditions or of those of the immediate future.

In other respects the laborer returns not uninfluenced by his sojourn in another land. His knowledge of ideal things may remain the same, but his knowledge of concrete things has expanded. He has become accustomed to better—at least different—clothing, more varied food, a generally wider material horizon. His consumption has grown. And by his newly acquired wants and his example he is increasing the consuming impulse of the whole Mexican laboring class. It is somewhat to the advantage of Americans that the things he has learned to want are mostly the product of our own country and that the increment to the market is in the demand for American goods. Mexico, too, is benefited by this increased consumption, for it is paid for by additional labor, which develops the country. There is at least a shadow of ground for the contention of some optimistic residents of Mexico that the labor supply of the country is not really lessened by emigration to the United States, because the new needs of the returning laborers make all laborers work the harder. Even if this compensating outcome is not so immediate as these people hold it will probably come ultimately in the greater aggregate laboring power of the nation.

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The relation of the Mexican laborer to his employer has been modified by many new conditions, of which the emigration to the north is perhaps the most typical. The workingman is no longer so dependent on his "patron" as formerly. He changes employers more frequently and freely. He expects cash wages and offers a sort of passive resistance to many forms of industrial oppression to which he used to submit without question. A coal mining company employing several thousand men formerly paid monthly, issuing in the interval scrip to the miners, which was accepted at par for goods, but discounted 40 and 50 per cent by speculators for cash. Many of these speculators worked in collusion with higher employees of the company. At this time the men were receiving 55 cents (27½ cents United States currency) per ton for getting out coal. A shrewd Yankee contracted part of the mine for a long period, and began to pay 45 cents (22½ cents United States currency) a ton to his miners, but gave them their earnings in cash every evening. Soon he had several hundred of the best workers of the company, recruited by it at great expense, in his part of the mine; and his success and competition forced the company to adopt the same plan of payment. With cash wages the men bought their supplies on better terms, and in general they were more independent; but the company permitted no competing store upon its property. A rival company went one step further and permitted competing stores to locate in the vicinity of its mines. Now it has abundant labor at the expense of its competitor. As an English mine manager in a different part of the country said: "The Mexicans are learning to dislike to be shepherded."

Not only is the Mexican learning to look upon his relations with his employer as a matter of contract rather than of dependence, and therefore changing employers more freely, but also he is learning to change his occupation. The differentiation in occupations accompanying the industrial development of the country—and made still greater by the wider sphere of employment opened to the Mexican laborer by emigration—is giving the worker greater diversity of training, and thereby making him more intelligent. Managers of mines, of smelters, and of railways in Mexico mentioned the improvement of their labor, due to increased experience and training, within the past few years; and it was generally thought that emigration was an added influence in the same direction. Even some of those who most deplored the temporary loss of labor due to this cause congratulated themselves that these migrating workers returned better qualified for work than they were when they left.

Upon the whole, the balance of advantage or disadvantage to Mexico from this migration of its labor northward is not at once clear. There can be seen certain specific benefits for the individual laborer, and at longer range benefits for the entire laboring class of the coun-

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try, from the higher wages and added experience the emigrants get in the United States. Returning emigrants bring back some money with them. On the other hand, the labor shortage in their home country leads to the importation of Asiatics—which might occur in any case—and undoubtedly makes more difficult new industrial undertakings, while it embarrasses old ones. Still the volume of this emigration as yet is not large enough to be of vital importance, even to a thinly populated country like Mexico. Should this labor migration increase, as recent indications promise, it will be a serious matter for that country to consider.

SOME EFFECTS IN THE UNITED STATES.

So long as the Mexican immigration is transient it is not likely to have much influence upon the United States, except as it regulates the labor market in a limited number of occupations and probably within a restricted area; for transient labor is not likely to be largely employed beyond a certain radius from El Paso and the Rio Grande, or to enter lines of employment in which it competes with citizen labor. But the Mexicans are making their homes in the United States in increasing numbers and, being assimilated by the Spanish-speaking population of the Southwest, are forming the civic substratum of our border States. The proportion of the immigrants who ultimately take up a permanent residence north of the border is entirely a matter of estimate. As this immigration has assumed importance since the census of 1900, figures derived from the census reports do not indicate present conditions and tendencies. Nevertheless, the following table gives the statistical background for the subject, so far as one exists:

MEXICAN POPULATION AND PER CENT OF MEXICAN OF TOTAL POPULATION IN THE UNITED STATES AND IN CERTAIN BORDER STATES AND TERRITORIES, 1880, 1890, AND 1900.

Locality.	1880.		1890.		1900.	
	Mexican-born population.	Per cent of total population.	Mexican-born population.	Per cent of total population.	Mexican-born population.	Per cent of total population.
Arizona	9,330	23.06	11,534	19.35	14,172	11.53
California	8,648	1.00	7,164	.51	8,086	.54
New Mexico	5,173	4.32	4,504	2.93	6,649	3.40
Texas	43,161	2.71	51,559	2.31	71,062	2.33
Border States and Territories.	66,312	2.54	74,761	2.04	99,969	2.06
Total United States	68,399	.14	77,853	.12	103,410	.14

Up to 1900 very few Mexicans had emigrated beyond the border States and Territories. For instance, Colorado, which now employs several hundred Old Mexicans transiently, had but 274 residents of that nationality in the last census year. Louisiana had 488. Colorado, however, had 10,222 residents, mostly in the mining counties around Trinidad, who had been born in New Mexico.

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The table shows that between 1880 and 1890 the Mexican-born population increased more slowly than the total population; but that during the following decade it increased at a more rapid ratio than the total population, both in the United States as a whole and in all the border districts except Arizona. In 1880 Mexicans comprised 1.01 per cent of the total foreign-born population of the United States; in 1890, 0.9 per cent, and in 1900, 1 per cent, showing the same general tendency of variation as to the total population. Of the more than 5,000 immigrants who passed through El Paso in September, 1907, not one expressed the intention of becoming an American citizen. The only one of several score questioned at the immigration station who had this intention was a skilled mechanic, of quite a different class from the main body of immigrants. Nevertheless, Mexicans are settling permanently, especially in Texas and California. Two persons in a position to be unusually well informed upon the subject, one of them a general official of a railway carrying immigrants to the frontier, estimated that 50 per cent of those who visited the United States finally made their home there. Upon the Mexican Central Railway, which moves more immigrants than any other single road in Mexico, the official estimate of third-class passengers (laborers) crossing the frontier northward during the twelve months ended with August, 1907, was 50,000, and the return traffic during the same period was estimated to be 37,000. However, the proportion of those passing through El Paso who return is larger than of those crossing the lower Rio Grande, because so much of the former labor is employed on railways and in mines in the desert, where there is little temptation to make a permanent home. Immigrants through El Paso are seldom accompanied by their families, while many women and children cross at Laredo, especially to pick cotton. A prominent Mexican merchant in San Antonio, Tex., said: "Mexicans who have come to the United States seldom go back to stay, because conditions are better here, and because they are not kept down so much in this country." The superintendent of public instruction of Arizona stated that in the southern counties of that Territory nearly one-half the children enrolled in public schools have foreign-born parents, mostly Mexicans, but that very few of these children were born in Mexico. In California Mexican laborers were said to be accompanied by their families, and to be settled in little colonies near a number of the larger towns; but in Colorado there was no evidence that the immigrant Mexicans have come to remain. An evidence of increasing settlement in Texas is the large number of excursionists that return to Mexico each year to attend the religious festivals at Aguas Calientes and at the City of Mexico. These people, though Mexican born, buy return tickets to Texas.

The transition in Texas from an immigration of temporary laborers to one of settlers was thus described by a railroad official who had

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observed it from the outset: "Ten years ago our Mexican immigrants were chiefly men. It was rare to see a woman among those who came through here from any distance down the line. About 1900, men who had been in the United States and returned to Mexico began to bring back their families with them. Usually they were also accompanied by a number of single men, or married men without their families, who had never before been in this country. Most of the men who had families with them did not go back the following season, but the men without their families did, and some of them in turn came back the next year with their families to remain permanently. So the process goes on, with, I believe, a larger proportion of women and children among the immigrants each year, and a larger proportion remaining in this country."

The Bishop of Texas diocese (Roman Catholic) stated that many thousand immigrants from Old Mexico were settling in his parishes, and that the increase of Mexican population was general throughout the southern part of the State.

Probably a conservative estimate of the proportion of the immigrants remaining permanently in the United States would be from one-fourth to one-third. The number is probably in the neighborhood of 20,000 per annum. In the lack of more definite data than is possessed at present the number can only be estimated—and the estimate has possibly a wide margin of error—because this annual increment to the permanent Mexican population of the country settles over such a wide area that its presence is hardly perceptible except in large city colonies.

Americans of Mexican descent take an active part in local politics and have their bosses and machines like English-speaking Americans. In New Mexico they were said to make very fair citizens, though more apt to be loyal to personal leaders than to political parties. The immigrants, even if they make their home in this country, seldom become naturalized. The records at San Antonio show that before the Federal naturalization law went into operation the number of persons with German names who became citizens was eight or nine times the number of those bearing Spanish names, though the Mexican population of Bexar County is over one-third the total foreign-born residents. In the entire State in 1900 the Mexican population was 39.6 per cent of the total foreign-born population, and doubtless has been increasing relatively since that year. Those Mexicans who become naturalized have usually resided in the United States for many years, sometimes for the greater part of their lives. It is not unusual for several persons of the same family name to acquire citizenship at the same time, probably to facilitate the settling of an estate or for other legal purpose.

Spanish-speaking citizens consider themselves so
the immigrants, and rather pride themselves

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There is for this reason less social intermingling than the identity of language, religion, and customs might lead one to expect. The "Americanization" of the Spanish-speaking population of the Southwest is proceeding much more rapidly at present than heretofore, partly because these people are themselves migrating temporarily or permanently to English-speaking sections of the country, and partly because of the large immigration from other parts of the Union. The history of Las Vegas, N. Mex., indicates how this change affects civic ideals. The original Mexican town in the river valley antedates the advent of the American. When the railway was built an American town grew up in its vicinity, possibly a mile from the center of the older village. Later the two places were incorporated as a single city. But this arrangement was unpopular with the Mexicans, used to more primitive political arrangements and averse to taxation, and through their influence the town was disincorporated. The American town then went ahead, incorporated separately, constructed public works, and built up an excellent system of public schools, including a high school, housed in fine buildings. After several years the Mexican town finally incorporated separately, and now is following the example of its neighbor in the matter of improvements and school facilities. So this New Mexican and largely Spanish-speaking community is now taxing itself more heavily than many a town in the East for public education, and has issued bonds and erected creditable schoolhouses. This case is fairly representative of what is taking place wherever the railway and American example are bringing the influence of other sections of the country to bear upon the native population. An educational officer, who himself spoke Spanish fluently, whose duties made him familiar with conditions in the southern part of Colorado, said that a marked language change had occurred within ten years, so that while formerly it was comparatively rare to meet a person of Mexican race who spoke English, it was now rare to meet a young "Mexican" who was not familiar with that language.

These changes to American habits of life in the home, and to American civic ideals in the community, coupled with the gradual acquisition of English in the public schools, are all recent. The public school system of New Mexico is but fifteen years old, and railways have been in the territory less than a generation. They have as yet influenced appreciably only that part of the so-called Mexican population that has been born in the United States. At present the immigrant Mexican does not seem likely to be assimilated by our own people; that is, actual fusion of blood appears to be remote. But barring this, which may not be permanent, he may learn to understand our institutions and adopt our habits of thought and action in public affairs.

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COST OF LIVING OF THE WORKING CLASSES IN THE PRINCIPAL INDUSTRIAL TOWNS OF THE GERMAN EMPIRE.

SCOPE OF THE INVESTIGATION.

Under the above title is presented the results of an investigation undertaken by the British Board of Trade in the 33 principal industrial towns of the German Empire in order to obtain, in regard to the condition of the working classes therein, information comparable with that given for the principal industrial towns of the United Kingdom in the report on the "Cost of Living of the Working Classes," presented to Parliament in December, 1907, by the Labor Department of the Board of Trade.[a] The investigation has reference primarily to the rents of working-class dwellings, to the prices usually paid by the working classes for food and fuel, and to wages and hours of labor. It was conducted so far as practicable on lines identical with the inquiry for the towns of the United Kingdom, and the statistical material collected relates in the main to the same date (October, 1905), though in some instances, particularly in regard to prices and wages, information was procured for a later date (March–April, 1908).

In order to arrive at some estimate of the standard of living among the German industrial classes, over 5,000 budgets showing the expenditure for food by working-class families in a normal week, and representative of numerous occupations and of all grades of incomes, were obtained from the various towns investigated. These towns contain an aggregate population of some 9,000,000.

Any exact statistical comparison of cost of living in Germany with cost of living in England is not a simple matter. Even when all the difficulties of maintaining the same standard of investigation throughout have been successfully overcome there remains a difficulty inherent in the nature of things arising from the different habits and modes of living in the two countries. The point is well illustrated by the result obtained from the present investigation, "that an English workman migrating to Germany, and maintaining, so far as possible, his own standard of living would find the cost of rent, food, and fuel raised by about one-fifth, while the German workman who migrated to England, but retained his own habits of living, would find his

[a] See Bulletin of the Bureau of Labor, No. 77, July 1908, pp. 336 to 354.

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expenditure on the same items reduced by less than one-half that amount."

As a basis of comparison for the German towns among themselves the levels of rents, prices, and wages in Berlin have been taken as standards, and index numbers calculated for each of these items in every town, so as to afford an indication of the relative levels of the towns. The index numbers for rents and prices in each town have also been combined in a single index number, in order to determine the relative level for each town of the cost of living of the working classes, so far as it consists of expenditure for housing and food, and for this purpose, as the expenditure for food is much greater than that for rent, prices have been given a weight of 4 and rents a weight of 1 in the construction of the combined index number. The comparison of the rates of wages has been confined mainly to occupations in certain standard industries, as in the United Kingdom report, namely, the building trades, engineering (mechanical), and printing, which are found to a greater or less extent in all the towns. The general result of the comparison is that in German towns the workmen engaged in these industries receive about 17 per cent less in money wages in return for a week's work of about 10 per cent longer duration than the corresponding English workmen. In other words, their hourly rate of money remuneration is about three-fourths of the corresponding English rate, while the cost of food, rent, and fuel (measured by the English standard) is about one-fifth higher.

According to the report for the United Kingdom the prevailing type of dwelling occupied by the working classes in England and Wales, and to a less degree in Ireland, is a self-contained two-story dwelling, possessing generally four or five rooms and a separate scullery; in Germany the predominant type is a flat of two or three rooms with appurtenances, in a large tenement house. The German housing system, therefore, approximates more closely to the Scottish type—blocks of flats of two, three, or four stories—than to the English. English rents of working-class dwellings usually include local taxation, which is based on the rentable value of the dwellings; in Germany local taxation is levied on an entirely different basis, and is not included in rent. In regard to food the British workman's meat consists mainly of beef and mutton, while pork (even including bacon) is relatively small in amount; the German workman, on the other hand, eats chiefly pork (including sausage) and beef, and only a very little mutton. The pure wheat bread eaten by the working classes of the United Kingdom is replaced in Germany either by pure rye bread or, more commonly, by some mixture of rye and wheat. These are only a few indications of the difficulties which arise in international comparisons, and it seems desirable to repeat the warning that

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in the construction of comparative index numbers it is impossible to make full allowance for diversity of national habits, tastes, and prejudices.

It may be pointed out that there is little if any difference between the general levels of rent in Germany and rent in England, though rents in England include a considerable element of local taxation, while rents in Germany do not; and that rents in Berlin exceed those of all the other German towns investigated (except Stuttgart) to practically the same extent as rents in London exceed those which prevail in other towns of the United Kingdom. Further, the range of town price levels in Germany, as in the United Kingdom, is not very great, though somewhat wider in the case of the German towns, with the result that the differences between the cost of living (so far as it relates to the expenditure for rent, food, and fuel) in one or another of the German towns investigated are not very much larger than those which exist between the towns of the United Kingdom. The general level of prices is, however, distinctly higher in Germany than in the United Kingdom, and in this connection an important instance of the effects of differences in national habits may be noticed. The English workman going to Germany and maintaining his accustomed standard of living would find his expenditure for food and fuel substantially increased; but in spite of the generally higher level of prices in Germany the German workman coming to England, and maintaining his own standard, would not find his expenditure reduced in a corresponding proportion. This is due mainly to the fact that the German workman takes much more than the English workman of certain food commodities, chiefly potatoes and milk, which are cheaper in German than in English towns. Finally, while nominal rents are as high in Germany as in England—and in fact higher, since they do not include local taxation, which the German workman must pay separately—and also while the general level of food prices in the German towns is higher than in England, wages in those trades for which a comparison has been made are substantially lower, even when longer hours are worked.

In addition to obtaining information comparable with that given in the report on the "Cost of living of the working classes in the principal industrial towns of the United Kingdom," much information was obtained as to the general conditions of industrial life and labor in Germany, including such matters as the distribution of occupations and organization of industry, wage agreements and hours of labor, factory rules, workmen's societies and institutions, housing, public health administration, vital statistics, municipal enterprises, and local taxation. Besides those used for purposes of comparison, the industrial occupations covered by the reports is of wide range.

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RENTS OF WORKING-CLASS DWELLINGS.

THE GERMAN EMPIRE.

In order to ascertain the rents paid for the kind of dwellings usually occupied by the German working classes, information was obtained from the municipal authorities, from individual house owners, and from large numbers of tenants through the trade unions. In each town a number of houses were visited by the investigators, partly for the purpose of verifying the information obtained as to rents and partly that some account might be given in each case of the general character and standard of housing accommodation.

The prevalent type of working-class dwelling in Germany, as already stated, is a flat in a large house, containing a minimum of six or seven tenements. This may fairly be described as the common type of housing accommodations for all classes in Germany, and it is a characteristic feature of German towns that, while there are purely working-class districts, yet the working classes are generally scattered throughout the whole of a town, occupying either the upper floors of houses whose lower floors may be occupied by middle-class tenants, or else housed in buildings which lie concealed behind the better-class houses visible from the street. In some of the larger towns these houses with many tenements resemble large barracks built around small paved courtyards, there being in addition to the block fronting upon the street another block lying behind and parallel to it, and not infrequently also one or more side blocks either isolated or running back from the front block and connecting it with the one at the rear. The rents in these back and side houses are as a rule lower than those paid in the front blocks. In the more modern constructions there are many variations of this plan, tending on the whole to the elimination of either the back or the side blocks or of both.

The traditional and still normal working-class dwelling in such a house consists of three rooms (living room, bedroom, and kitchen), together with certain appurtenances, such as a share of the cellar for the storage of fuel, etc., and even for laundry use, and the use (on a particular day) of a loft for drying purposes. Many of the newer tenements have at the front or back a balcony, which is used in this latter way also. Two-room tenements, usually with appurtenances, are also very common, and these two types (with the three-room tenement predominant) may be taken as representing the prevalent standard of working-class housing throughout Germany. Four-room tenements are of importance in this connection only in rare cases; tenements of one room, though fairly frequent, are not sufficiently so to be regarded as constituting an important type,

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while working-class dwellings of five or more rooms are scarcely to be found.

From rent quotations obtained for over 107,000 working-class tenements the following table has been constructed to show the predominant range of weekly rents for tenements of various sizes in Germany as a whole, excluding Berlin. It should be stated that the rents include the charge for water, and in some cases small charges for chimney sweeping and the removal of refuse; but they do not include any element of local taxation.

WEEKLY RENTS IN TOWNS OF GERMANY (EXCLUDING BERLIN).

Number of rooms per tenement.	Number of towns to which figures relate.	Predominant range of weekly rents.	Number of towns in which the mean rent is—		
			Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
Two rooms	22	$0.65–$0.85	13	5	4
Three rooms	32	.85– 1.16	19	6	7
Four rooms	15	1.03– 1.46	8	3	4

From the above table it will be seen that the three-room tenement was found to be an important type of working-class housing in every one of the towns investigated, that two-room tenements were of importance in two-thirds of the towns, and four-room tenements in rather less than one-half of the total number.

A comparison of the predominant range of rents (except for four-room tenements), given in the above table, with those shown for Berlin, reveals the extent to which rents in the metropolis exceed those which prevail in other German towns. The contrast is brought out in the following brief table:

WEEKLY RENTS IN BERLIN AND IN OTHER GERMAN TOWNS COMPARED.

Locality.	Predominant range of weekly rents for—	
	Two rooms.	Three rooms.
Berlin	$1.22–$1.46	$1.70–$2.25
Other German towns	.65– .85	.85– 1.16

Thus, while the mean rent for two rooms in Berlin is $1.34, in the other towns as a whole it is only $0.75, and for three rooms in Berlin it is $1.97½, and elsewhere only $1.00½. It may be noted that rents are nearly as high in Stuttgart as in Berlin, the mean weekly rents for two and three rooms in that town being $1.26 and $1.97½, respectively.

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In the table following is shown the predominant range of weekly rents for tenements of two, three, and four rooms in the 33 towns of the Empire investigated.

WEEKLY RENTS IN 33 GERMAN TOWNS.

Town.	Predominant range of weekly rents for—		
	Two rooms.	Three rooms.	Four rooms.
Aix-la-Chapelle	$0.65–$0.85	$0.85–$1.12	
Aschaffenburg		1.12– 1.40	
Barmen	.59– .93	.83– 1.40	
Berlin	1.22– 1.46	1.70– 2.25	
Bochum	.73– .91	.73– 1.40	
Bremen		.85– 1.12	$1.12–$1.32
Breslau	.79– .89	.85– 1.12	
Brunswick		.57– .85	.71– .97
Chemnitz		.57– .79	.97– 1.12
Crefeld	.71– .85	.85– 1.12	1.05– 1.26
Danzig	.57– .73	.85– 1.12	
Dortmund	.85– .97	1.26– 1.46	
Dresden		.93– 1.26	.97– 1.40
Dusseldorf	.97– 1.22	1.30– 1.70	
Elberfeld	.61– .85	.97– 1.40	
Essen	.67– .87	.89– 1.40	1.40– 1.87
Hamburg		1.12– 1.40	1.40– 1.70
Konigsberg	.81– .97	1.03– 1.28	
Königshütte	.53– .67	.85– 1.12	
Leipzig		.85– 1.01	1.07– 1.40
Magdeburg		.71– .89	
Mannheim	.79– .89	1.01– 1.30	1.40– 1.95
Mülhausen	.49– .67	.79– 1.12	1.12– 1.34
Munich	.73– 97	1.01– 1.40	
Nuremberg		.85– 1.22	1.03– 1.40
Oschersleben	.28	.43– .59	.71– .85
Plauen	.59– .71	.81– .93	1.28– 1.64
Remscheid	.73– .85	.85– 1.26	
Solingen	.73– .85	.85– 1.40	1.40– 1.70
Stassfurt	.43– .55	.57– .61	.69– .85
Stettin		.79– .95	
Stuttgart	1.12– 1.40	1.70– 2.25	
Zwickau	.49– .57	.57– .85	

In the following table index numbers are given showing the relative rent level in each of the towns canvassed as compared with Berlin. Rents of two and three room tenements only were obtained for Berlin, the rents of four-room tenements there being beyond the means of the working classes. As four-room tenements constituted an important type in several other towns, it was not possible to use the predominant range of rents in Berlin directly as the basis for comparison for the rent levels of the several towns, hence the following method was adopted. The means of the predominant rents for each class of tenements in the whole of Germany (excluding Berlin), as shown in the table on page 527, were taken as the base and the ratios of the mean predominant rents for the corresponding classes in the various towns as compared with this base were calculated. The average of the ratios for the various types of houses in each town gave an index number for the town as compared with the level for the German towns as a whole, excluding Berlin. The index number for Berlin, computed in the same way, was then taken as the base (or 100) and the index numbers for the other towns adjusted accordingly.

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RELATIVE RENT LEVEL OF GERMAN TOWNS AS COMPARED WITH BERLIN.

Town.	Index number.	Town.	Index number.	Town.	Index number.
Berlin	100	Bochum	57	Leipzig	51
Stuttgart	97	Elberfeld	57	Danzig	49
Dusseldorf	79	Barmen	57	Mülhausen	48
Dortmund	68	Remscheid	56	Königshütte	47
Aschaffenburg	67	Breslau	56	Stettin	46
Hamburg	66	Dresden	54	Magdeburg	43
Mannheim	64	Nuremberg	53	Chemnitz	40
Konigsberg	62	Aix-la-Chapelle	53	Zwickau	38
Munich	62	Crefeld	52	Brunswick	37
Essen	62	Bremen	52	Stassfurt	33
Solingen	61	Plauen	52	Oschersleben	28

THE GERMAN EMPIRE AND GREAT BRITAIN COMPARED.

A comparison of the predominant range of weekly rents in England and Wales with the predominant range in Germany for tenements of two, three, and four rooms is presented in the table following:

WEEKLY RENTS IN ENGLAND AND WALES AND IN GERMANY COMPARED.

Number of rooms per tenement.	Predominant range of weekly rents in—		Ratio of mean predominant rent in Germany to that in England and Wales, taken as 100.
	England and Wales.	Germany.	
Two rooms	$0.73–$0.85	$0.65–$0.85	95
Three rooms	.91– 1.10	.85– 1.16	100
Four rooms	1.10– 1.34	1.08– 1.46	102.5

The above table shows an approximate equality of rents that is quite remarkable, more particularly when it is remembered that the English rents cover all local taxation while the German rents do not. If the mean of the index numbers in the last column might be taken as representing roughly the rent level in Germany as compared with that in England, we should find the German rent level slightly the lower of the two—in the ratio of 99 to 100. A comparison on these lines is, however, liable to be somewhat misleading, for the reason that rents of two, three, and four room tenements were not obtained from all the towns investigated in each case. It is necessary, therefore, to adopt some more exact method of comparison less open to possible bias. This has been done by reworking all the rent index numbers for the German towns to the basis used for Great Britain, viz, comparing the mean predominent rents of the types of tenements shown for each town in Germany with the mean predominant rents shown for tenements of the same size in the middle zone of London, and using as the index number in each case the average of the percentages so obtained. The resulting index numbers for the German towns investigated,

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shown in the table below, are accordingly directly comparable with the index numbers for the English towns shown in the report for the United Kingdom. It may be noted as a coincidence that this method of comparison gives for Berlin the index number 100, as shown in the table, but it should be borne in mind that the predominant rents in the middle zone of London represent the base (100) in every case.

RELATIVE RENT LEVEL OF GERMAN TOWNS AS COMPARED WITH THE MIDDLE ZONE OF LONDON AS THE BASE (100).

Town.	Index number.	Town.	Index number.	Town.	Index number.
Berlin	100	Elberfeld	58	Plauen	53
Stuttgart	97	Barmen	57	Danzig	49
Dusseldorf	79	Bochum	57	Mülhausen	49
Hamburg	70	Dresden	57	Stettin	48
Aschaffenburg	69	Breslau	56	Königshütte	47
Dortmund	68	Nuremberg	56	Magdeburg	44
Mannheim	66	Remscheid	56	Chemnitz	42
Essen	63	Bremen	55	Brunswick	39
Konigsberg	62	Leipzig	54	Zwickau	38
Munich	62	Aix-la-Chapelle	53	Stassfurt	34
Solingen	62	Crefeld	53	Oschersleben	28

The whole series of numbers is very similar to that given for English towns, but the rent levels of German towns show a somewhat greater variation than those in the English table. The ratio of the arithmetic mean for Germany to that for England is 101 to 100, and this ratio, or the index number 101, is taken for the purposes of this report as representing approximately the rent level in Germany as compared with England. While from the preceding estimate there appears no great difference one way or the other between the rents payable for a given number of rooms of working-class accommodation in the industrial towns of the two countries, there is, however, as already mentioned, a very important difference between the services obtained for the payment of rent in England and in Germany. When an English workman has paid his rent he has in nearly all cases not only paid for the use of the rooms that he occupies but also for all the services provided by the local authority out of the rates. In Germany local taxation is paid by means of an addition to the State income tax and, consequently, the workman who has paid his rent has nevertheless still to pay taxes.

It is estimated that approximately 18 per cent of the rent paid by the British workingman goes for local taxation. This makes the German rents bear to English rents the ratio of 101 to 82, which is equivalent to 123 to 100.

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RETAIL PRICES.

THE GERMAN EMPIRE.

Information as to the prices commonly paid by the German working classes for food commodities, for fuel, and for paraffin oil was obtained from a large number of shopkeepers in each of the towns investigated and also from the cooperative societies where these existed. It must be remembered that the prices shown are not necessarily the minimum prices at which the commodities could be obtained, but simply the prices which the working classes did in fact usually pay in the month of October, 1905, and where a range of prices is given it is because they appear to be of equal popularity. The differences between one town and another, accordingly, represent often not so much differences in the cost of identical commodities as variations in local tastes and sometimes in local standards of comfort.

The following table presents the predominant range of retail prices commonly paid by the working classes for certain commodities, for Germany as a whole (including Berlin):

RETAIL PRICES OF COMMODITIES IN TOWNS OF GERMANY, OCTOBER, 1905.

Commodity.	Unit.	Number of towns included.	Predominant range of retail prices, October, 1905.	Number of towns in which the mean predominant price is—		
				Within the limits of the predominant range.	Below the limits of the predominant range.	Above the limits of the predominant range.
Coffee	1 pound	33	$0.22 - $0.26	22	3	8
Sugar, granulated	do	33	.04½ - .05	24	4	5
Bacon	do	33	.18 - .22	30	2	1
Cheese, Dutch	do	12	.18 - .20	8	1	3
Cheese, Limburg	do	27	.10 - .13	23	3	1
Butter	do	33	.26 - .30	27	2	4
Margarin	do	32	.16 - .18	25	6	1
Potatoes	7 pounds	33	.04½ - .06	25	5	3
Flour, wheat	do	33	.23 - .28	20	7	6
Bread, gray	4 pounds	32	.10 - .13	27	3	2
Milk	1 quart	33	.05 - .05½	25	7	1
Beef	1 pound	33	.16 - .18	26	6	1
Pork	do	33	.18 - .22	29	4	.....
Coal	1 cwt	31	.22 - .32	19	6	6
Paraffin oil	1 gallon	33	.19 - .22	30	1	2

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In the following table is shown the predominant range of retail prices of the principal commodities in 12 towns of Germany, selected as to certain geographical districts:

RETAIL PRICES OF COMMODITIES IN 12 SELECTED TOWNS OF GERMANY, OCTOBER, 1905.

Commodity.	Unit.	Berlin.	Breslau.	Danzig.	Dresden.
Coffee	1 pound	$0.22	$0.22	$0.18	$0.22
Sugar, granulated	do	$0.05–0.05½	.04	.04	.05
Bacon, fat	do	.18–.21	$0.20–.22	.20	$0.20–.22
Bacon, streaky	do	.20–.24	.20–.21	.20	.20–.22
Eggs	1 dozen	.17	.16	.23	.21
Cheese:					
Dutch	1 pound	[a].18			
Limburg	do	.11–.13	.16		.13
Swiss	do	.22		$0.18–.20	
Butter	do	.26–.29	.29–.30	.29	.30–.31
Margarin	do	.18	.13	.16	.18
Potatoes	7 pounds	.04–.04½	.04–.05	.03½	.04–.05½
Flour, wheat	do	.31	.20	.22–.23	.31
Flour, rye	do	.23	.17–.19	.17	.25–.28
Bread, gray	4 pounds	.11	.10	.11	.10–.12
Bread, black	do	.10			
Milk	1 quart	.05–.05½	.04½	.04½	.05½
Coal	1 cwt	.30	.25	.28–.32	.26
Paraffin oil	1 gallon	.22	.20	.20	.19–.20
Beef:					
Ribs	1 pound	.16–.18	.18–.19	.14	.16
Silverside	do	.18–.22	.20	.17	.18–.22
Shin, with bone	do	.13	.16–.18	.09	.18
Shin, without bone	do	.16	.20–.21		.20
Steak	do	.22–.26	.33	.20	.26–.31
Flank	do	.13–.16	.18	.16	.16
Mutton:					
Leg	do	.19–.20	.22	.18	.20–.22
Shoulder	do	.17–.20	.20–.22	.17	.20
Breast	do	.16	.20	.17	.16–.18
Neck	do	.16	.22	.16	.18
Chops, trimmed	do	.20–.22	.22–.24	.19	.22
Pork:					
Leg	do	.17–.19	.20	.17–.18	.20–.22
Foreloin	do	.18	.20	.17	.20–.22
Belly	do	.14–.18	.18–.19	.17	.18
Spare ribs	do	.19–.21	.20	.18	.22–.26
Chops	do	.22–.24	.24	.20	.22–.26
Veal:					
Hind quarter	do	.20–.24	.22	.18	.20–.22
Shoulder, with bone	do	.18	.22	.14–.17	.18–.20
Shoulder, without bone	do	.26	.23–.31	.26	.22–.26
Shin	do	.16	.18–.22	.09–.11	.13
Loin	do	.20–.22	.26	.18–.22	.20–.22

Commodity.	Unit.	Dusseldorf.	Essen.	Hamburg-Altona.	Leipzig.
Coffee	1 pound	$0.22	$0.20–$0.22	$0.20	$0.22–$0.26
Sugar, granulated	do	.05½	.04½–.05	.04½	.05
Bacon, fat	do	.20	.18–.21	.20	.19–.22
Bacon, streaky	do	.22	.19–.21	$0.20–.22	.20–.22
Eggs	1 dozen	.22	.19–.27	.17–.21	.21
Cheese:					
Dutch	1 pound	$0.20–.21	.18–.19	.20–.22	
Limburg	do	.11	.10–.11	.12	.09–.10
Swiss	do	.21–.22	.22–.24	.22–.26	
Butter	do	.29–.31	.26–.31	.24–.26	.29–.31
Margarin	do	.16	.12–.18	.11–.13	.18
Potatoes	7 pounds	.04½–.06	.04½	.05½	.04½–.05½
Flour, wheat	do	.23	.22–.23	.22	.25–.28
Flour, rye	do		.19–.22	.19	.20
Bread, gray	4 pounds	.11–.12	.13	.10–.11	.10
Bread, black	do		.06–.09	.08–.09	
Milk	1 quart	.05½	.05	.05½	.06
Coal	1 cwt	.23	.17–.22	.23–.26	.30
Paraffin oil	1 gallon	.19	.19–.20	.17–.18	.22
Beef:					
Ribs	1 pound	.17	.14–.16	.16	.17–.18
Silverside	do	.16–.19	.14–.16	.17	.20–.22
Shin, with bone	do	.14–.16	.14	.10–.11	.14–.19

[a] Tilsit cheese.

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RETAIL PRICES OF COMMODITIES IN 12 SELECTED TOWNS OF GERMANY, OCTOBER, 1905—Concluded.

Commodity.	Unit.	Dusseldorf.	Essen.	Hamburg-Altona.	Leipzig.
Beef—Concluded.					
Shin, without bone	1 pound	$0.22		$0.13–$0.14	$0.18–$0.22
Steak	do	.26	$0.22	.29–.35	.20
Flank	do	$0.14–.16	$0.13–.16	.16–.18	.18
Mutton:					
Leg	do	.19–.20	.16–.20	.20	.20
Shoulder	do	.18	.16–.18	.20	.17–.18
Breast	do	.13–.14	.14–.18	.20	.17–.18
Neck	do	.13–.14	.14–.18	.16–.20	.17–.18
Chops, trimmed	do	.18–.20	.20–.22	.20–.24	.18–.20
Pork:					
Leg	do	.20–.22	.18–.20	.18–.20	.18–.20
Foreloin	do	.20–.24	.18–.22	.20	.18–.20
Belly	do	.20	.16–.20	.18	.18
Spare ribs	do	.22	.16–.20	.18	.20–.22
Chops	do	.22	.18–.22	.20–.22	.22
Veal:					
Hind quarter	do	.20–.21	.18–.20	.20	.20
Shoulder, with bone	do	.18–.19	.18–.20	.18	.18
Shoulder, without bone	do	.26		.20–.22	
Shin	do		.18	.13–.16	.13
Loin	do	.31	.22	.22	.20–.22

Commodity.	Unit.	Magdeburg.	Munich.	Nuremberg.	Stuttgart.
Coffee	1 pound	$0.22	$0.22–$0.26	$0.22–$0.26	$0.22–$0.26
Sugar, granulated	do	.04½	.05	.05	.05
Bacon, fat	do	.20	.18–.20	.22–.24	.18–.19
Bacon, streaky	do	.22	.18–.20	.22–.24	.18–.19
Eggs	1 dozen	$0.21–.27	.21	.19–.21	.19–.21
Cheese:					
Dutch	1 pound				
Limburg	do	.11–.13	.11	.11	.11–.13
Swiss	do	.24–.26	.22–.26	.22–.26	.22
Butter	do	.29	.26–.29	.26–.29	.29
Margarin	do	.16–.18	.16	.17	.18
Potatoes	7 pounds	.05½–.06	.04½–.06	.04½	.04½
Flour, wheat	do	.22–.25	.31	.31	.28
Flour, rye	do	.20			
Bread, gray	4 pounds	.09–.10	.13	.11–.13	.12
Bread, black	do				.10
Milk	1 quart	.05–.05½	.05½	.05½	.05
Coal	1 cwt	.21–.22	.30	.29–.33	.40–.42
Paraffin oil	1 gallon	.19	.22	.20	.20
Beef:					
Ribs	1 pound	.18	.16–.18	.18	.16–.18
Silverside	do	.18–.20	.16–.18	.18	.16–.18
Shin, with bone	do	.18	.16–.18	.18	.16–.17
Shin, without bone	do	.20	.22	.22	
Steak	do	.22	.20–.26	.33	.22–.26
Flank	do	.16–.18	.16–.18	.18	.16–.17
Mutton:					
Leg	do	.20	.15–.18	.17–.20	.16–.19
Shoulder	do	.18–.20	.15–.16	.17–.19	.16–.19
Breast	do	.16–.18	.12–.16	.17–.19	.16–.19
Neck	do	.16	.12–.16	.17–.19	.16–.19
Chops, trimmed	do	.20	.16–.18	.22	.22–.26
Pork:					
Leg	do	.20	.19–.20	.20	
Foreloin	do	.20	.18–.20	.20	.19
Belly	do	.18	.18–.20	.20	.19
Spare ribs	do	.18	.18–.20	.20	.19
Chops	do	.20–.22	.19–.20	.22–.24	.19
Veal:					
Hind quarter	do	.18–.20	.16–.18	.17–.19	.17–.19
Shoulder, with bone	do	.18	.16–.18	.17–.19	.17–.19
Shoulder, without bone	do	.20		.26–.31	
Shin	do	.18			
Loin	do	.18–.20	.16–.18	.17–.19	.17–.19

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In order to obtain an indication of the level of prices for each town as compared with other towns, index numbers have been constructed, the level of prices in Berlin being taken as the base (100). In the construction of the index numbers, in order to allow for the varying importance of the prices of different articles, as judged by the normal weekly expenditure of a working-class family, recourse was had to "weighting." For this purpose average quantities estimated from 5,046 family budgets giving weekly cost and quantity of certain articles of food consumed by workmen's families in German towns, in 1906–7, were utilized.

The following table groups these 5,046 families according to the aggregate weekly income of the family (not of the principal wage-earner only), and shows for each group the average family income and the average number of children at home for a representative week in 1906–7:

NUMBER AND AVERAGE INCOME OF URBAN WORKMEN'S FAMILIES REPORTING IN EACH CLASSIFIED INCOME GROUP AND AVERAGE NUMBER OF CHILDREN LIVING AT HOME, FOR A REPRESENTATIVE WEEK, 1906-7.

Classified weekly income.	Number of families reporting.	Average weekly family income from—			Total weekly family income.	Average number of children at home.
		Husband.	Wife.	Children.		
Under $4.87	193	$4.10	$0.18	$0.01	$4.29	2.37
$4.87 or under $6.08	872	5.25	.23	.04	5.52	2.28
$6.08 or under $7.30	1,329	6.15	.34	.10	6.59	2.51
$7.30 or under $8.52	1,223	7.07	.47	.21	7.75	2.51
$8.52 or under $9.73	692	7.80	.65	.47	8.92	2.79
$9.73 or over	737	8.08	.68	3.09	11.85	3.76

With regard to the statistics of families with the higher ranges of income it must be remembered that the amount of the family income is often due to the supplementary earnings of the wife or of children living at home, rather than to the high earnings of the head of the family. This is particularly the case where the income amounts to $9.73 or more per week. As will be seen from the table, the average number of children living at home was, in the families of this class, higher than the average number for all the families from which budgets were obtained.

The tables following give the average expenditures for food of the 5,046 workmen's families to which the returns relate and the quantities consumed by them of the various articles of food in a representative week in 1906–7. All children living at home, irrespective of age, have been included, but returns in which lodgers appeared have been excluded.

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AVERAGE COST OF FOOD CONSUMED BY URBAN WORKMEN'S FAMILIES REPORTING IN EACH CLASSIFIED INCOME GROUP FOR A REPRESENTATIVE WEEK, 1906-7.

Items.	Average cost for families reporting weekly incomes of—					
	Under $4.87.	$4.87 or under $6.08.	$6.08 or under $7.30.	$7.30 or under $8.52.	$8.52 or under $9.73.	$9.73 or over.
Bread and flour	$0.598	$0.644	$0.700	$0.740	$0.831	$1.100
Meat (beef, pork, mutton, veal)	.547	.573	.684	.821	.928	1.242
Sausage	.228	.289	.324	.395	.431	.598
Meat (other), including fish	.071	.081	.086	.096	.117	.147
Bacon	.106	.122	.132	.147	.162	.198
Eggs	.066	.122	.152	.172	.193	.243
Milk, fresh	.208	.269	.314	.340	.390	.431
Cheese	.056	.061	.076	.091	.106	.132
Butter	.162	.248	.319	.375	.411	.527
Margarin	.081	.101	.107	.112	.127	.152
Potatoes	.198	.203	.208	.213	.238	.294
Other vegetables and fruit	.056	.122	.162	.188	.208	.269
Rice, barley, and oatmeal	.035	.051	.056	.056	.061	.071
Macaroni	.010	.020	.030	.030	.036	.046
Coffee	.117	.142	.157	.172	.193	.248
Sugar	.086	.091	.096	.102	.106	.132
Cocoa and chocolate	.005	.020	.036	.041	.046	.056
Sirups	.015	.015	.015	.015	.015	.020
Salt and condiments	.031	.046	.051	.056	.061	.066
Lard, suet, and dripping	.182	.157	.157	.162	.182	.223
Other items of food	.041	.081	.107	.102	.122	.152
Meals away from home	.051	.101	.132	.162	.182	.314
Beer	.041	.116	.167	.218	.253	.324
Total	2.991	3.675	4.268	4.806	5.399	6.985

AVERAGE QUANTITY OF FOOD CONSUMED BY URBAN WORKMEN'S FAMILIES REPORTING IN EACH CLASSIFIED INCOME GROUP FOR A REPRESENTATIVE WEEK, 1906-7.

Items.	Average quantity consumed by families reporting weekly incomes of—					
	Under $4.87.	$4.87 or under $6.08.	$6.08 or under $7.30.	$7.30 or under $8.52.	$8.52 or under $9.73.	$9.73 or over
Bread and flour.....pounds..	21.99	23.33	25.05	26.06	29.83	38.21
Meat (beef, pork, mutton, veal)...do....	3.14	3.30	3.83	4.54	5.19	6.85
Sausage.....do....	1.25	1.55	1.68	2.07	2.20	2.92
Bacon.....do....	.55	.70	.70	.75	.84	1.01
Milk, fresh.....pints..	8.76	11.09	12.30	12.83	14.45	16.10
Eggs.....number..	4.20	7.40	9.20	10.20	11.60	14.40
Cheese.....pounds..	.35	.42	.46	.62	.60	.77
Butter.....do....	.55	.90	1.12	1.37	1.48	1.87
Potatoes.....do....	28.13	25.57	23.96	23.81	24.63	33.55
Coffee.....do....	.49	.64	.73	.77	.86	1.12
Sugar.....do....	1.81	1.83	1.96	1.98	2.14	2.67

The proportion of the weekly income spent on food by the families of German urban workmen is brought out in the statement following:

PROPORTION OF WEEKLY INCOME SPENT ON FOOD BY URBAN WORKMEN'S FAMILIES.

Items.	Percentage of income spent on food by families reporting weekly incomes of—					
	Under $4.87.	$4.87 or under $6.08.	$6.08 or under $7.30.	$7.30 or under $8.52.	$8.52 or under $9.73.	$9.73 or over.
All food (excluding beer)	68.7	64.5	62.3	59.2	57.7	56.3
Meat (including bacon and fish)	22.2	19.3	18.6	18.8	18.4	18.4

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From the average quantity of food consumed weekly by workmen's families, on the basis of 5,046 family budgets, and from information obtained from other sources, the following are the quantities of the selected commodities assumed to be consumed by a German working-class family in a normal week:

Coffee	pound	¾	Flour, wheat	pounds	2
Sugar, granulated	pounds	2	Bread	do	25
Bacon	pound	¾	Milk	quarts	6½
Cheese	do	½	Beef	pounds	2½
Butter	pounds	1¼	Pork	do	1¾
Eggs	number	10	Coal	hundredweight	1½
Potatoes	pounds	26			

The predominant prices in each town, as ascertained for the various articles, are weighted in accordance with the above quantities, the total expenditure so obtained being expressed as a percentage of the corresponding total as compiled from prices in Berlin. The following table shows, in descending order, the price index numbers thus constructed for the various towns:

RELATIVE LEVEL OF PRICES IN SPECIFIED GERMAN TOWNS AS COMPARED WITH BERLIN.

Town	Index number.	Town.	Index number.	Town.	Index number.
Barmen	110	Dusseldorf	102	Essen	9[illegible]
Mannheim	109	Elberfeld	102	Zwickau	9[illegible]
Mülhausen	109	Plauen	102	Oschersleben	9[illegible]
Stuttgart	108	Konigsberg	101	Stassfurt	9[illegible]
Munich	107	Brunswick	101	Magdeburg	9[illegible]
Nuremberg	107	Solingen	101	Hamburg-Altona	9[illegible]
Remscheid	105	Aschaffenburg	101	Danzig	9[illegible]
Bremen	105	Leipzig	101	Bochum	9[illegible]
Chemnitz	105	Crefeld	100	Dortmund	9[illegible]
Dresden	103	Berlin	100	Breslau	9[illegible]
Aix-la-Chapelle	103	Stettin	99	Königshütte	8[illegible]

From the foregoing it is seen that there are no less than 19 out of the 33 towns which have a prices index number higher than Berlin. The total difference between the highest and the lowest towns is 24 points, as contrasted with 72 points in the case of rents. However, if Königshütte (whose index number for prices is low) be excluded, the maximum difference in price levels is only 15 points.

RENTS AND PRICES COMBINED.

The presentation following gives the index numbers for each of the 33 specified towns in Germany for that portion of the cost of living which is due to expenditure on food and fuel and on housing accommodation. As the amount which has to be expended on food, etc., is considerably greater than that which has to be spent on rent, a weight of 4 has been given to prices and a weight of 1 to rent.

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RELATIVE LEVEL OF RENT AND PRICES COMBINED IN 33 SPECIFIED TOWNS OF GERMANY.

Town.	Index number.	Town.	Index number.	Town.	Index number.
Stuttgart	106	Dresden	93	Dortmund	90
Mannheim	100	Konigsberg	93	Stettin	88
Berlin	100	Aix-la-Chapelle	93	Brunswick	88
Barmen	99	Elberfeld	93	Bochum	88
Munich	98	Solingen	93	Danzig	87
Dusseldorf	97	Chemnitz	92	Breslau	87
Mülhausen	97	Plauen	92	Magdeburg	86
Nuremberg	96	Essen	92	Zwickau	86
Remscheid	95	Leipzig	91	Stassfurt	85
Bremen	94	Hamburg-Altona	91	Oschersleben	84
Aschaffenburg	94	Crefeld	90	Königshütte	78

THE GERMAN EMPIRE AND GREAT BRITAIN COMPARED.

The difficulties in the way of any complete comparison of the relative prices ruling for similar commodities in England and in Germany, so far as they affect the expenditure of the working classes of the two countries, are sufficiently obvious from what has been said respecting the diversity of national habits and tastes. Neglecting, however, such differences, the predominant prices paid by the working classes of the two countries for commodities quoted in both were as follows:

RETAIL PRICES OF COMMODITIES IN TOWNS OF ENGLAND AND WALES AND OF GERMANY, IN OCTOBER, 1905, COMPARED.

Commodity.	Unit.	Predominant retail prices, October, 1905.		Ratio of mean predominant price in Germany to mean predominant price in England, taken as 100.
		England and Wales.	Germany.	
Sugar, granulated	1 pound	$0.04	$0.04½–$0.05	119
Butter	do	.27	.26 – .30	105
Potatoes	7 pounds	$0.05– .07	.04½– .06	88
Flour	do	.16– .20	.23 – .28	140
Milk	1 quart	.06– .08	.05 – .05½	75
Beef	1 pound	[a] .15– .17	.16 – .18	122
		[b] .10– .12		
Mutton	do	[a] .15– .18	.16 – .20	137
		[b] .06– .10		
Pork	do	.15– .17	.18 – .22	123
Bacon	do	.14– .18	.18 – .22	123
Coal	1 cwt	.19– .24	.22 – .32	124
Paraffin oil	1 gallon	.14– .16	.19 – .22	135

[a] British or home killed. [b] Foreign or colonial.

The arithmetic mean of the above numbers may be taken as a rough index to the relative price levels of the two countries, for commodities common to both, and is found to be 117 for Germany as compared with 100 for England.

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It does not follow, however, that this ratio fairly represents the relative prices paid in the two countries for the necessaries of existence. In the United Kingdom report the price levels of different towns were compared by the amount required to purchase the groceries, meat, and coal in an approximate average workingman's budget. In order to furnish a similar comparison in the present case the following table is given showing relatively how much the average British workingman would have to pay if he went to live in Germany and purchased the same kinds of food in the same quantities as he had previously used in England. The table shows that his expenditure would be increased in the ratio of 100 to 118.

COST OF THE AVERAGE BRITISH WORKINGMAN'S WEEKLY BUDGET (EXCLUDING TEA AND COFFEE) AT THE PREDOMINANT PRICES PAID BY THE WORKING CLASSES OF ENGLAND AND WALES AND OF GERMANY, IN OCTOBER, 1905.

Article.	Quantity in average British budget.	Predominant prices in October, 1905, in—		Cost of quantity in British budget in—	
		England and Wales.	Germany.	England and Wales.	Germany.
Sugar	5½ pounds	$0.041 per pound	$0.046 to $0.051 per pound	$0.218	$0.259
Bacon	1½ pounds	$0.142 to $0.183 per pound	$0.177 to $0.223 per pound	.243	.299
Cheese	¾ pound	$0.142 per pound	$0.101 to $0.132 per pound	.107	.086
Butter	2 pounds	$0.269 per pound	$0.264 to $0.299 per pound	.537	.563
Potatoes	17 pounds	$0.051 to $0.071 per 7 pounds.	$0.046 to $0.061 per 7 pounds.	.147	.127
Flour (wheat)	10 pounds	$0.162 to $0.203 per 7 pounds.	$0.233 to $0.279 per 7 pounds.	.259	.365
Bread (wheat, in England)	22 pounds	$0.091 to $0.112 per 4 pounds.		.558	
Equivalent wheat flour in Germany	22 pounds		$0.233 to $0.279 per 7 pounds.		.806
Milk	5 quarts	$0.061 to $0.081 per quart.	$0.051 to $0.056 per quart.	.355	.269
Beef	4½ pounds	$0.137 per pound	$0.157 to $0.177 per pound	.619	.750
Pork	½ pound	$0.152 to $0.172 per pound	$0.177 to $0.223 per pound	.081	.101
Mutton	1½ pounds	$0.129 per pound	$0.157 to $0.198 per pound	.193	.269
Coal	2 cwt	$0.193 to $0.243 per cwt.	$0.218 to $0.324 per cwt.	.436	.543
Total				3.753	4.437
Index number				100	118

On the other hand, the German workingman going to live in England would not reduce his expenditures for food in as high a ratio as 118 to 100, for his purchases as shown in the following table are entirely different in quantity from the British workingman's, and in some cases, notably potatoes and milk, he buys more of articles which are dearer in England and Wales than in Germany. The table shows that his expenditure would be decreased in the ratio of 108 to 100.

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COST OF THE AVERAGE GERMAN WORKINGMAN'S WEEKLY BUDGET (EXCLUDING TEA AND COFFEE) AT THE PREDOMINANT PRICES PAID BY THE WORKING CLASSES OF ENGLAND AND WALES AND OF GERMANY, IN OCTOBER, 1905.

Article.	Quantity in average German budget.	Predominant prices in October, 1905, in—		Cost of quantity in German budget in—	
		England and Wales.	Germany.	England and Wales.	Germany.
Sugar	2 pounds	$0.041 per pound	$0.046 to $0.051 per pound.	$0.081	$0.096
Bacon	¾ pound	$0.142 to $0.183 per pound.	$0.177 to $0.223 per pound.	.122	.152
Cheese	½ pound	$0.142 per pound	$0.101 to $0.132 per pound.	.071	.061
Butter	1¼ pounds	$0.269 per pound	$0.264 to $0.299 per pound.	.335	.350
Potatoes	26 pounds	$0.051 to $0.071 per 7 pounds.	$0.046 to $0.061 per 7 pounds.	.228	.198
Flour (wheat)	2 pounds	$0.162 to $0.208 per 7 pounds.	$0.233 to $0.279 per 7 pounds.	.051	.071
Bread (wheat, in England).	25 pounds	$0.091 to $0.112 per 4 pounds.		.634	
Bread (wheat and rye in Germany).	25 pounds		$0.096 to $0.132 per 4 pounds.		.715
Milk	6½ quarts	$0.061 to $0.081 per quart.	$0.051 to $0.056 per quart.	.461	.345
Beef	2½ pounds	$0.137 per pound	$0.157 to $0.177 per pound.	.299	.370
Pork	1⅞ pounds	$0.152 to $0.172 per pound.	$0.177 to $0.223 per pound.	.259	.319
Coal	1½ cwt.	$0.193 to $0.243 per cwt.	$0.218 to $0.324 per cwt.	.324	.406
Total				2.865	3.083
Index number				100	108

The differences in the amounts consumed and the sums spent for the chief commodities by workingmen's families receiving certain specified weekly incomes are brought out in the two following statements:

RATIOS OF THE QUANTITIES OF CERTAIN ARTICLES OF FOOD CONSUMED BY WORKMEN'S FAMILIES IN GERMANY, RECEIVING SPECIFIED WEEKLY INCOMES, TO THE QUANTITIES OF THE SAME ARTICLES CONSUMED BY WORKMEN'S FAMILIES IN GREAT BRITAIN WITH CORRESPONDING INCOMES.

[Quantities in Great Britain=100.]

Items.	Families receiving weekly incomes of—		
	$6.08 or under $7.30.	$7.30 or under $8.52.	$8.52 or under $9.73.
Bread and flour	84	89	99
Meat and fish	88	90	95
Eggs	106	90	97
Milk, fresh	159	130	140
Cheese	66	78	78
Butter, margarin, lard, etc	113	115	120
Potatoes	151	148	155
Sugar	42	41	41

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RATIOS OF THE AMOUNTS SPENT ON CERTAIN ARTICLES OF FOOD CONSUMED BY WORKMEN'S FAMILIES IN GERMANY, RECEIVING SPECIFIED WEEKLY INCOMES, TO THE AMOUNTS SPENT ON THE SAME ARTICLES BY WORKMEN'S FAMILIES IN GREAT BRITAIN WITH CORRESPONDING INCOMES.

[Expenditure in Great Britain=100.]

Items.	Families receiving weekly incomes of—		
	$6.08 or under $7.30.	$7.30 or under $8.52.	$8.52 or under $9.73.
Bread and flour	87	92	102
Meat and fish	103	100	105
Eggs	88	77	79
Milk, fresh	132	110	118
Cheese	68	75	88
Butter, margarin, lard, etc.	115	112	117
Potatoes	105	100	115
Vegetables and fruit	114	93	87
Farinaceous foods (other than bread and flour)	85	71	83
Tea, coffee, cocoa, etc.	66	65	67
Sugar	47	47	47

RATES OF WAGES.

THE GERMAN EMPIRE.

An inquiry into the rates of wages prevailing in October, 1905, in the various towns canvassed was made as complementary to the one into rents and prices. In order to facilitate comparison, four industries were selected which were represented in all the towns with few exceptions, and in which the standard rates of wages could be ascertained with accuracy. These industries were the building trades, engineering, printing, and municipal employment; and the rates in Berlin were again taken as the base for the index numbers. The rates referred to are in all cases weekly rates.

The following table, which is exclusive of Berlin, shows the predominant range of weekly wages for each of the occupations in the selected standard industries in towns of Germany:

RATES OF WAGES IN TOWNS OF GERMANY, OCTOBER, 1905.

Industry and occupation.	Number of towns included.	Predominant range of weekly wages, October, 1905.	Number of towns in which the mean wage for the given occupation was—		
			Within the predominant range.	Below the predominant range.	Above the predominant range.
BUILDING TRADES.					
Bricklayers and masons	32	$6.55-$7.60	19	7	6
Carpenters	32	6.55- 7.60	16	8	8
Joiners and cabinetmakers	30	5.84- 6.57	16	7	7
Plumbers	28	5.84- 6.93	20	4	4
Stucco workers	26	8.03- 8.76	13	8	5
Painters	29	5.84- 7.22	25	1	3
Laborers	32	4.74- 5.84	18	7	7
ENGINEERING TRADES.					
Molders	21	7.30- 8.27	10	6	5
Fitters	28	6.33- 7.79	18	6	4
Turners	28	6.57- 8.03	17	6	5
Smiths	23	6.93- 8.03	12	6	5
Pattern makers	28	6.20- 7.30	15	6	7
Laborers	28	4.38- 5.35	22	3	3

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RATES OF WAGES IN TOWNS OF GERMANY, OCTOBER, 1905—Concluded.

Industry and occupation.	Number of towns included.	Predominant range of weekly wages, October, 1905.	Number of towns in which the mean wage for the given occupation was—		
			Within the predominant range.	Below the predominant range.	Above the predominant range.
PRINTING TRADE.					
Compositors, machine tenders, and pressmen	32	$6.02–$6.31	21	6	5
MUNICIPAL EMPLOYMENT.					
Road makers	30	4.38– 5.25	18	6	6
Road sweepers	26	4.18– 5.11	18	4	4
Gas stokers	29	5.84– 7.30	22	3	4
Gas laborers	29	4.38– 5.47	23	3	3
Waterworks laborers	29	4.38– 5.25	16	6	7

In the following table is shown the predominant rate of weekly wages for skilled men for each of the specified occupations in the building, engineering, and printing trades in 12 towns of Germany, selected as to certain geographical districts:

RATES OF WEEKLY WAGES IN 12 SELECTED TOWNS OF GERMANY, OCTOBER, 1905.

Industry and occupation.	Berlin.	Breslau.	Danzig.	Dresden.	Dusseldorf.	Essen.
BUILDING TRADES.						
Bricklayers and masons	$9.51	$7.30	$7.02	$7.20	$7.89	$7.60
Carpenters	9.51	7.30	6.71	7.20	8.31	7.32
Joiners and cabinetmakers	7.77	5.58	.....	7.20	6.71	6.57
Plumbers	7.81	6.57	5.56	$6.57– 6.81	5.84	$5.78– 6.29
Stucco workers	10.22	6.57	.....	7.58	8.76	8.62
Painters	7.16	5.84	.....	6.69	6.57	6.71– 7.02
ENGINEERING TRADES.						
Molders	$8.27– 9.45	.....	.....	7.30– 8.52	9.00	8.76– 9.98
Fitters	7.30– 8.03	7.60	$5.11– 5.43	6.08– 6.57	$7.30– 8.52	7.30– 9.49
Turners	9.06– 9.45	8.27	5.43	6.57– 7.30	8.03– 8.76	7.91– 9.49
Smiths	7.30– 7.58	8.03	5.43– 5.56	.....	8.03– 8.76	7.30– 8.76
Pattern makers	8.76– 9.00	7.30	5.72– 6.08	6.57– 7.30	7.30– 8.03	6.57
PRINTING TRADE.						
Hand compositors, machine tenders, and pressmen	6.85	6.31	6.02	6.43	6.16	6.31
Machine compositors:						
News	8.56	7.87	7.52	8.05	7.71	7.87
Job	8.90	8.19	7.83	8.35	7.81	8.19

Industry and occupation.	Hamburg-Altona.	Leipzig.	Magdeburg.	Munich.	Nuremberg.	Stuttgart.
BUILDING TRADES.						
Bricklayers and masons	$9.77	$7.89	$7.22	$7.58	$6.93	$6.61
Carpenters	9.77	7.89	7.22	7.16	6.93	6.61
Joiners and cabinetmakers	7.10	7.75	6.20	6.57	5.78	5.45
Plumbers	7.81	6.57	.....	7.22	6.12	6.12
Stucco workers	$10.22–11.68	.....	.....	9.43	$7.48– 9.02	7.30
Painters	7.89	7.18	6.57	5.92	6.31	$6.31– 6.57
ENGINEERING TRADES.						
Molders	6.57– 7.30	.....	$8.27– 9.00	$6.08– 7.30	7.48	8.76
Fitters	7.30– 8.76	$7.30– 8.03	6.57– 8.03	5.84– 6.81	6.08– 7.91	5.96– 6.81
Turners	7.30– 8.76	7.79– 8.03	7.30– 8.76	6.33– 7.30	6.81– 8.46	6.57– 6.81
Smiths	7.30– 8.76	8.03– 8.52	7.30– 8.03	.....	.....	7.89
Pattern makers	7.30– 8.76	6.57– 8.27	6.57– 7.54	6.81– 7.79	5.92– 6.81	6.33– 7.06
PRINTING TRADE.						
Hand compositors, machine tenders, and pressmen	6.85	6.57	6.02	6.43	6.31	6.43
Machine compositors:						
News	8.56	8.21	7.52	8.05	7.87	8.05
Job	8.90	8.54	7.83	8.35	8.19	8.35

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In the table following index numbers are given comparing (with Berlin as the base = 100) the weekly rates of wages of workmen in the four specified industries in the different towns of Germany, the towns being arranged in seven geographical groups:

RELATIVE LEVEL OF WEEKLY WAGES IN GERMAN TOWNS AS COMPARED WITH BERLIN.

Geographical groups.	Building.		Engineering.		Printing.	Municipal employees.
	Skilled men.	Laborers.	Skilled men.	Laborers.	Skilled men.	
Berlin	100	100	100	100	100	100
Central Germany:						
Magdeburg	81	89	90	99	88	.....
Brunswick	89	89	91	89	92	92
Stassfurt	71	76	80	91	80	81
Oschersleben	91	67	83	89	80	65
Rhineland Westphalia (textile towns):						
Elberfeld	89	94	.....	.....	88	85
Barmen	82	89	91	96	88	80
Aix-la-Chapelle	79	70	96	87	88	89
Crefeld	78	85	90	101	88	84
Rhineland Westphalia (hardware towns):						
Dusseldorf	85	103	98	103	90	93
Essen	83	99	99	99	92	87
Dortmund	84	101	90	99	90	90
Bochum	83	96	87	96	88	87
Remscheid	83	85	97	108	88	91
Solingen	87	103	88	89	88	89
South Germany:						
Munich	85	89	83	89	94	91
Nuremberg	78	73	88	85	92	86
Stuttgart	75	81	84	83	94	87
Mannheim	81	89	96	101	90	91
Mülhausen	69	76	67	81	80	81
Aschaffenburg	71	76	65	83	80	72
Saxony:						
Dresden	83	90	83	106	94	90
Leipzig	88	95	95	96	96	89
Chemnitz	78	80	73	71	90	87
Plauen	81	77	.....	.....	88	76
Zwickau	68	66	65	78	86	69
Silesia:						
Breslau	76	78	95	88	92	81
Königshütte	65	58	.....	.....	84	72
Baltic ports:						
Stettin	79	67	71	83	90	78
Konigsberg	80	90	.....	.....	88	76
Danzig	74	72	67	85	88	78
North Sea ports:						
Hamburg-Altona	102	125	97	96	100	93
Bremen	89	100	79	89	92	101

RELATION OF RATES OF WAGES TO RENTS AND PRICES.

The presentation which follows shows for each of the geographical groups of Germany the mean index numbers for rent and prices and rent and prices combined, together with the mean index numbers for the weekly rates of wages of skilled men in the building, engineering, and printing industries. Berlin has been taken as the base (100) in each case. In the construction of the index numbers for rent and prices combined, prices have been given a weight of 4 and rent a weight of 1.

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RELATIVE LEVEL OF RENT AND PRICES, OF RENT AND PRICES COMBINED, AND OF WEEKLY WAGES OF SKILLED MEN IN 7 GEOGRAPHICAL GROUPS OF GERMANY AS COMPARED WITH BERLIN.

Geographical groups.	Number of towns included.	Mean index numbers.					
		Rent and prices.			Wages (skilled men).		
		Rent.	Prices.	Rent and prices combined.	Building.	Engineering.	Printing.
Berlin		100	100	100	100	100	100
Central Germany	4	35	99	86	83	86	85
Rhineland Westphalia:							
Textile towns	4	55	104	94	82	[a] 92	88
Hardware towns	6	64	100	93	84	93	89
South Germany	6	65	107	99	77	81	88
Saxony	5	47	102	91	80	[a] 79	91
Silesia	2	52	91	83	71	[a] 95	88
Baltic ports	3	52	99	89	78	[a] 69	89
North Sea ports	2	59	101	93	96	88	96

[a] The number of towns represented in the construction of this index number is less than the total number included within the geographical group.

If the mean of the wages index numbers in each group for the three industries (building, engineering, and printing) be taken, and the means so obtained divided by the index numbers for rent and prices combined, a comparison of the average level of "real" wages in the selected occupations may be made, viz, the money wages expressed in terms of their purchasing capacity (as shown in the index numbers of rent and prices combined). The results are shown in the table which follows:

AVERAGE LEVEL OF "REAL" WAGES AND LEVEL OF RENT AND PRICES COMBINED IN 7 GEOGRAPHICAL GROUPS OF GERMANY, AS COMPARED WITH BERLIN.

Geographical groups.	Number of towns included.	Mean index numbers.		
		Rent and prices combined.	Wages of skilled men in building, engineering, and printing trades.	Approximate relative level of "real" wages.
Berlin		100	100	100
Central Germany	4	86	85	99
Rhineland Westphalia:				
Textile towns	4	94	87	93
Hardware towns	6	93	89	96
South Germany	6	99	82	83
Saxony	5	91	83	91
Silesia	2	83	85	102
Baltic ports	3	89	79	89
North Sea ports	2	93	93	100

THE GERMAN EMPIRE AND GREAT BRITAIN COMPARED.

The predominant rates of weekly wages paid in the building, engineering, and printing trades of Germany (industries which were found in all the towns investigated) are here brought into contrast with the rates of weekly wages paid in similar trades in Great Britain.

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RATES OF WAGES IN TOWNS OF ENGLAND AND WALES AND OF GERMANY, IN OCTOBER, 1905, COMPARED.

Industry and occupation.	Predominant range of weekly wages, October, 1905.		Ratio of mean predominant wage in Germany to mean predominant wage in England, taken as 100.
	England and Wales.	Germany.	
BUILDING TRADES.			
Bricklayers	$9.12–$9.85	$6.55–$7.60	75
Masons	9.04– 9.57		
Carpenters	8.80– 9.57	6.55– 7.60	77
Plumbers	8.60– 9.67	5.84– 6.93	70
Painters	7.66– 9.12	5.84– 7.22	78
Laborers	5.72– 6.57	4.74– 5.84	86
ENGINEERING TRADES.			
Fitters	7.79– 8.76	6.33– 7.79	85
Turners	7.79– 8.76	6.57– 8.03	88
Smiths	7.79– 8.76	6.93– 8.03	90
Pattern makers	8.27– 9.25	6.20– 7.30	77
Laborers	4.38– 5.35	4.38– 5.35	100
PRINTING TRADE.			
Compositors	6.81– 8.03	6.02– 6.31	83
Arithmetic mean of ratios for all trades			83

In the case of the building trades the weekly wages given are, for both countries, the wages for a full working week in summer. In the case of the engineering trades, the English wages are the standard time rates recognized by the unions concerned; the German rates, on the other hand, are in most cases based on returns of actual earnings, and it is consequently doubtful how far the two sets of returns are strictly comparable. The standard time rates being often exceeded by actual earnings on piecework, it is probable that the German rates appear somewhat too high relatively to the English. The compositors' rates in both England and Germany are standard rates.

For skilled men in the building trades the German wages are about 75 per cent of the English; for skilled men in the engineering trades about 85 per cent of the English, and for compositors (hand) in the printing trade about 83 per cent of the English. Laborers in the building trades in Germany earn about 86 per cent of the weekly earnings of the corresponding class in England, while German laborers in the engineering trades have weekly earnings equal to those of the English. The arithmetic mean of the ratios for all trades shown in the table indicates that the mean predominant wage in Germany is approximately 83 per cent of that in England and Wales.

As most of the data for Germany are based on the gross earnings, before the compulsory deductions on account of insurance have been made, it might at first sight appear that account should be taken of such deductions. In point of fact, however, the deductions from the German workman's wages for insurance correspond in part to the pay-

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ments of the British workman to his friendly society or sick club for similar benefits, and only differ from these in the former being compulsory. Therefore, there does not seem to be any reason for making a deduction from the predominant German wage rates to make them comparable with the English.

HOURS OF LABOR.

In the table following is presented for the building, engineering, and printing trades a comparison of the average usual hours of labor per week in England and Wales with corresponding data for Germany:

AVERAGE USUAL HOURS OF LABOR PER WEEK IN ENGLAND AND WALES AND IN GERMANY COMPARED.

Industry and occupation.	Average usual hours of labor per week in—		Ratio of average hours of labor in Germany to those in England, taken as 100.
	England and Wales.	Germany.	
BUILDING TRADES.			
Bricklayers and masons	52½	59	112
Carpenters	53	59	111
Plumbers	53½	58	108
Painters	53½	59	110
Laborers	52½	59	112
ENGINEERING TRADES.			
Fitters	53	59½	112
Turners	53	59½	112
Smiths	53	59½	112
Pattern makers	53	59½	112
Laborers	53	59½	112
PRINTING TRADE.			
Compositors	52½	54	103
Arithmetic mean of ratios for all trades			111

It will be seen from the foregoing, except in the case of the printing trade, which is a highly organized one in Germany, and for which the working hours have been fixed by agreement at the relatively low level of 54 per week, the hours of labor in Germany are from 8 to 12 per cent higher than in England; or, on the average of the above trades, hours in Germany exceed those in England by rather more than 10 per cent.

SUMMARY OF CONCLUSIONS.

A summary of the conclusions derived from the investigation follows:

Rents.—Net rents of working-class dwellings in Germany are to gross rents (including rates) of working-class dwellings in England as 101 to 100.

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Net rents of working-class dwellings in Germany are to net rents of working-class dwellings in England (excluding that portion of English rents representing local taxation) as 123 to 100.

Retail prices.—On the basis of the ordinary English standard of consumption the expenditure of the workman on food and fuel in Germany is to his expenditure in England as 118 to 100.

If the expenditure on rent be combined with that on food and fuel (the expenditure on the latter items being taken at four times the former) the results are:

The expenditure on food, fuel, and rent of the workman in Germany, on the same basis as above, would be to that of the same workman in England, on the same items but including local taxation, as 115 to 100.

The expenditure on food, fuel, and rent of the workman in Germany would be to that of the same workman in England, on the same items, exclusive of local taxation, as 119 to 100.

It appears, therefore, that an English workman in Germany, and living as far as possible as he had been accustomed to live in England, would find his expenditure on rent (exclusive of local taxation), food, and fuel increased by some 19 per cent (or roughly by one-fifth).

Wages and hours of labor.—Weekly money wages of the working classes in German towns are to weekly wages of the same classes in England, in the trades selected for comparison, as 83 to 100.

Average usual working hours per week of the working classes in German towns are to those of the same classes in England, in the trades selected for comparison, as 111 to 100.

Consequently the hourly rates of money wages for the working classes in German towns are to those of the same classes in England, for the trades selected for comparison, as 75 to 100.

Thus on the above basis the German rate of money wages per hour is about three-fourths of the English rate, and the cost of rent, food, and fuel nearly one-fifth greater than in England.

CHANGES IN RETAIL PRICES AND RATES OF WAGES BETWEEN OCTOBER, 1905, AND MARCH, 1908.

It will be remembered that the returns upon which the index numbers referred to in the foregoing sections are based related to October, 1905, and it will be of interest to note what changes have occurred since that date. For this purpose supplementary investigations were made, in April, 1908, in regard to the movement of prices in six representative towns (Berlin, Aix-la-Chapelle, Chemnitz, Magdeburg, Mannheim, and Mülhausen) with a total population of about 3,000,000. Information was also obtained, so far as possible, in regard to the movement of wages during the same period.

The upward movement in the price of bread which set in during 1905 continued, with a certain break toward the end of 1906, until the beginning of 1908, since when there has been a slight fall in price in some of the towns. The following table summarizes in English

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units the prices of rye bread of various grades in October, 1905, and in February or March, 1908, for the six representative towns:

PRICE OF RYE BREAD IN SIX REPRESENTATIVE GERMAN TOWNS, OCTOBER, 1905, AND FEBRUARY OR MARCH, 1908.

Town.	Price of rye bread per 4 pounds.		Per cent of increase.
	October, 1905.	February or March, 1908.	
Aix-la-Chapelle	$0.086	$0.107	24
Berlin	.112	.152	36
Chemnitz	.096	.127	32
Magdeburg	.101	.127	25
Mannheim	.107	.122	14
Mülhausen	.101	.112	10

The rise in price thus ranges from 10 to 36 per cent, or an average advance of 23 per cent since October, 1905.

Since October, 1905, in the six towns under consideration, the movements in the prices of beef were comparatively small and very irregular. On the whole the highest level was reached toward the end of 1906, since which time, in spite of marked fluctuations in some cases, prices generally have tended downward. In the case of pork, on the other hand, there has been a considerable fall in prices, the greater part of this having taken place since the autumn of 1906. The average fall has been 15 per cent. Comparatively little information was obtained in regard to the movement in the prices of groceries. So far as it was possible to judge from the few returns obtained, prices appear to have undergone little change.

There has been on the whole a marked upward movement in the predominant weekly rates of wages or earnings between October, 1905, and March, 1908—a period of great industrial activity and expansion in all the towns and in all the industries investigated.

The following table shows the percentage changes in the predominant weekly earnings in various occupations of the engineering trades in five towns between October, 1905, and March, 1908:

PER CENT OF INCREASES IN PREDOMINANT WEEKLY WAGES IN THE ENGINEERING TRADES IN FIVE TOWNS BETWEEN OCTOBER, 1905, AND MARCH, 1908.

Occupation.	Berlin.	Chemnitz.	Magdeburg.	Mannheim.	Mülhausen.	Average.
Molders	5.4	2.8	13.7	14.9	9.1	9.2
Fitters	7.9	2.8	13.1	13.4	7.0	8.8
Turners	4.5	2.8	11.5	15.0	7.1	8.2
Smiths	5.9	2.7	11.6	18.0	4.6	8.6
Pattern makers	1.4	2.7	12.5	14.8	5.5	7.4
Laborers	8.0	3.0	11.0	6.4	5.2	6.7

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In the building trades the general movement has likewise been upward, as is shown by the following table, which gives the percentage changes for certain occupations of the industry in five towns between October, 1905, and March, 1908:

PER CENT OF INCREASES IN PREDOMINANT WEEKLY WAGES IN THE BUILDING TRADES IN FIVE TOWNS BETWEEN OCTOBER, 1905, AND MARCH, 1908.

Occupation.	Aix-la-Chapelle.	Berlin.	Chemnitz.	Magdeburg.	Mannheim.	Average.
Bricklayers and masons	[a] 3.4	2.8	11.5	3.9	8.1	4.6
Carpenters	9.4	2.8	11.5	3.9	.....	6.9
Painters	7.3	21.2	.....	3.6	13.6	9.1
Laborers	13.0	2.7	17.1	7.3	.....	8.0

[a] Decrease.

In the printing trade the wages of both hand and machine compositors have been increased by the revised national agreement which came into force in January, 1907, and will remain in operation until December 31, 1911. The effect of the new agreement amounts (in the towns considered) to an increase of 11 per cent in the rates of wages.

Considering the rise in wages in certain occupations of the textile industries and in the wages of municipal employees, if the data for all the above-mentioned trades be taken together, an estimate of a rise of 8 or 9 per cent in the general level of weekly wages and earnings between October, 1905, and March, 1908 (that is, in a period marked until near its close by great industrial activity), may be regarded as approximately accurate.

This rise in wages has been accompanied by some tendency to reduction of hours, especially where the normal hours previously exceeded 57 to 60 per week. In the printing trade hours remained unchanged, having been fixed by agreement at the universal level of 54 per week.

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BRITISH OLD AGE PENSIONS ACT OF 1908.

As the result of several years of effort and deliberation, Parliament at its late session passed an Old Age Pensions Act, the royal assent having been given August 1. A proposition to limit the operation of the law tentatively to a period of years was rejected, and it is fair to assume that the new principle involved is permanently incorporated into the administrative policy of Great Britain. The text in full is given below:

SUBJECT-MATTER OF SECTIONS.

Section 1: General provision as to old age pensions.
Section 2: Conditions under which pensions may be allowed.
Section 3: Disqualifications.
Section 4: Method of computing means or income of claimants.
Section 5. Payment of pensions.
Section 6: Pensions inalienable.
Section 7: Determination of claims and questions.
Section 8: Committees, officers, etc.
Section 9: False statements, misrepresentations, etc.
Section 10: Regulations made by whom; provision for expenses.
Section 11: Application of act to Scotland, Ireland, and the Scilly Islands.
Section 12: Date when act takes effect.
Schedule: Weekly rates of payment.

AN ACT to provide for old age pensions. [1st August, 1908.]

*Be it enacted by * * * Parliament assembled, and by the authority of the same, as follows:*

1.—(1) Every person in whose case the conditions laid down by this act for the receipt of an old age pension (in this act referred to as statutory conditions) are fulfilled, shall be entitled to receive such a pension under this act so long as those conditions continue to be fulfilled, and so long as he is not disqualified under this act for the receipt of the pension.

(2) An old age pension under this act shall be at the rate set forth in the schedule to this act.

(3) The sums required for the payment of old age pensions under this act shall be paid out of moneys provided by Parliament.

(4) The receipt of an old age pension under this act shall not deprive the pensioner of any franchise, right, or privilege, or subject him to any disability.

2.—The statutory conditions for the receipt of an old age pension by any person are—

(1) The person must have attained the age of seventy;

(2) The person must satisfy the pension authorities that for at least twenty years up to the date of the receipt of any sum on account of a pension he has been a British subject, and has had his residence, as defined by regulations under this act, in the United Kingdom;

(3) The person must satisfy the pension authorities that his yearly means as calculated under this act do not exceed thirty-one pounds ten shillings [$153.29].

3.—(1) A person shall be disqualified for receiving or continuing to receive an old age pension under this act, notwithstanding the fulfillment of the statutory conditions—

(a) While he is in receipt of any poor relief (other than relief excepted under this provision), and, until the thirty-first day of December nineteen hundred and ten unless Parliament otherwise determines, if he has at any time since the first day of

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January nineteen hundred and eight received, or hereafter receives, any such relief: *Provided* That for the purposes of this provision—

(i) any medical or surgical assistance (including food or comforts) supplied by or on the recommendation of a medical officer; or

(ii) any relief given to any person by means of the maintenance of any dependent of that person in any lunatic asylum, infirmary, or hospital, or the payment of any expenses of the burial of a dependent; or

(iii) any relief (other than medical or surgical assistance, or relief hereinbefore specifically exempted) which by law is expressly declared not to be a disqualification for registration as a parliamentary elector, or a reason for depriving any person of any franchise, right, or privilege;

shall not be considered as poor relief:

(b) If, before he becomes entitled to a pension, he has habitually failed to work according to his ability, opportunity, and need, for the maintenance or benefit of himself and those legally dependent upon him:

Provided That a person shall not be disqualified under this paragraph if he has continuously for ten years up to attaining the age of sixty, by means of payments to friendly, provident, or other societies, or trade unions, or other approved steps, made such provision against old age, sickness, infirmity, or want or loss of employment as may be recognized as proper provision for the purpose by regulations under this act, and any such provision, when made by the husband in the case of a married couple living together, shall as respects any right of the wife to a pension, be treated as provision made by the wife as well as by the husband:

(c) While he is detained in any asylum within the meaning of the Lunacy Act, 1890, or while he is being maintained in any place as a pauper or criminal lunatic:

(d) During the continuance of any period of disqualification arising or imposed in pursuance of this section in consequence of conviction for an offense.

(2) Where a person has been before the passing of this act, or is after the passing of this act, convicted of any offense, and ordered to be imprisoned without option of a fine or to suffer any greater punishment, he shall be disqualified for receiving or continuing to receive an old age pension under this act while he is detained in prison in consequence of the order, and for a further period of ten years after the date on which he is released from prison.

(3) Where a person of sixty years of age or upwards having been convicted before any court is liable to have a detention order made against him under the Inebriates Act, 1898, and is not necessarily, by virtue of the provisions of this act, disqualified for receiving or continuing to receive an old age pension under this act, the court may, if they think fit, order that the person convicted be so disqualified for such period, not exceeding ten years, as the court direct.

4.—(1) In calculating the means of a person for the purpose of this act account shall be taken of—

(a) the income which that person may reasonably expect to receive during the succeeding year in cash, excluding any sums receivable on account of an old age pension under this act, that income, in the absence of other means for ascertaining the income, being taken to be the income actually received during the preceding year;

(b) the yearly value of any advantage accruing to that person from the use or enjoyment of any property belonging to him which is personally used or enjoyed by him;

(c) the yearly income which might be expected to be derived from any property belonging to that person which, though capable of investment or profitable use, is not so invested or profitably used by him; and

(d) the yearly value of any benefit or privilege enjoyed by that person.

(2) In calculating the means of a person being one of a married couple living together in the same house, the means shall not in any case be taken to be a less amount than half the total means of the couple.

(3) If it appears that any person has directly or indirectly deprived himself of any income or property in order to qualify himself for the receipt of an old age pension, or for the receipt of an old age pension at a higher rate than that to which he would otherwise be entitled under this act, that income or the yearly value of that property shall, for the purposes of this section, be taken to be part of the means of that person.

5.—(1) An old age pension under this act, subject to any directions of the treasury in special cases, shall be paid weekly in advance in such manner and subject to such conditions as to identification or otherwise as the treasury direct.

(2) A pension shall commence to accrue on the first Friday after the claim for the pension has been allowed, or, in the case of a claim provisionally allowed, on the first Friday after the day on which the claimant becomes entitled to receive the pension.

6.—Every assignment of or charge on and every agreement to assign or charge an old age pension under this act shall be void, and, on the bankruptcy of a person enti-

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tled to an old age pension, the pension shall not pass to any trustee or other person acting on behalf of the creditors.

7.—(1) All claims for old age pensions under this act and all questions whether the statutory conditions are fulfilled in the case of any person claiming such a pension, or whether those conditions continue to be fulfilled in the case of a person in receipt of such a pension, or whether a person is disqualified for receiving or continuing to receive a pension, shall be considered and determined as follows:

(a) Any such claim or question shall stand referred to the local pension committee, and the committee shall (except in the case of a question which has been originated by the pension officer and on which the committee have already received his report), before considering the claim or question, refer it for report and inquiry to the pension officer:

(b) The pension officer shall inquire into and report upon any claim or question so referred to him, and the local pension committee shall, on the receipt of the report of the pension officer and after obtaining from him or from any other source if necessary any further information as to the claim or question, consider the case and give their decision upon the claim or question;

(c) The pension officer, and any person aggrieved, may appeal to the central pension authority against a decision of the local pension committee allowing or refusing a claim for pension or determining any question referred to them within the time and in the manner prescribed by regulations under this act, and any claim or question in respect of which an appeal is so brought shall stand referred to the central pension authority, and shall be considered and determined by them:

(d) If any person is aggrieved by the refusal or neglect of a local pension committee to consider a claim for a pension, or to determine any question referred to them, that person may apply in the prescribed manner to the central pension authority, and that authority may, if they consider that the local pension committee have refused or neglected to consider and determine the claim or question within a reasonable time, themselves consider and determine the claim or question in the same manner as on an appeal from the decision of the local pension committee.

(2) The decision of the local pension committee on any claim or question which is not referred to the central pension authority, and the decision of the central pension authority on any claim or question which is so referred to them, shall be final and conclusive.

8.—(1) The local pension committee shall be a committee appointed for every borough and urban district, having a population according to the last published census for the time being of twenty thousand or over, and for every county (excluding the area of any such borough or district), by the counsel of the borough, district, or county.

The persons appointed to be members of a local pension committee need not be members of the council by which they are appointed.

(2) A local pension committee may appoint such and so many subcommittees, consisting either wholly or partly of the members of the committee as the committee think fit, and a local pension committee may delegate, either absolutely or under such conditions as they think fit, to any such subcommittee any powers and duties of the local pension committee under this act.

(3) The central pension authority shall be the Local Government Board, and the board may act through such committee, persons, or person appointed by them as they think fit.

(4) Pension officers shall be appointed by the treasury, and the treasury may appoint such number of those officers as they think fit to act for such areas as they direct.

(5) Any reference in this act to pension authorities shall be construed as a reference to the pension officer, the local pension committee, and the central pension authority, or to any one of them, as the case requires.

9.—(1) If for the purpose of obtaining or continuing an old age pension under this act, either for himself or for any other person, or for the purpose of obtaining or continuing an old age pension under this act for himself or for any other person at a higher rate than that appropriate to the case, any person knowingly makes any false statement or false representation, he shall be liable on summary conviction to imprisonment for a term not exceeding six months, with hard labor.

(2) If it is found at any time that a person has been in receipt of an old age pension under this act while the statutory conditions were not fulfilled in his case or while he was disqualified for receiving the pension, he or, in the case of his death, his personal representative, shall be liable to repay to the treasury any sums paid to him in respect of the pension while the statutory conditions were not fulfilled or while he was disqualified for receiving the pension, and the amount of those sums may be recovered as a debt due to the Crown.

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10.—(1) The treasury in conjunction with the Local Government Board and with the postmaster-general (so far as relates to the post-office) may make regulations for carrying this act into effect, and in particular—

(a) for prescribing the evidence to be required as to the fulfillment of statutory conditions and for defining the meaning of residence for the purposes of this act; and

(b) for prescribing the manner in which claims to pensions may be made, and the procedure to be followed on the consideration and determination of claims and questions to be considered and determined by pension officers and local pension committees or by the central pension authority, and the mode in which any question may be raised as to the continuance, in the case of a pensioner, of the fulfillment of the statutory conditions, and as to the disqualification of a pensioner; and

(c) as to the number, quorum, term of office, and proceedings generally of the local pension committee and the use by the committee, with or without payment, of any offices of a local authority, and the provision to be made for the immediate payment of any expenses of the committee which are ultimately to be paid by the treasury.

(2) The regulations shall provide for enabling claimants for pensions to make their claims and obtain information as respects old age pensions under this act through the post-office, and for provisionally allowing claims to pensions before the date on which the claimant will become actually entitled to the pension, and for notice being given by registrars of births and deaths to the pension officers or local pension committees of every death of a person over seventy registered by them, in such manner and subject to such conditions as may be laid down by the regulations, and for making the procedure for considering and determining on any claim for a pension or question with respect to an old age pension under this act as simple as possible.

(3) Every regulation under this act shall be laid before each House of Parliament forthwith, and, if an address is presented to His Majesty by either House of Parliament within the next subsequent twenty-one days on which that House has sat next after any such regulation is laid before it, praying that the regulation may be annulled, His Majesty in Council may annul the regulation, and it shall thenceforth be void, but without prejudice to the validity of anything previously done thereunder.

(4) Any expenses incurred by the treasury in carrying this act into effect, and the expenses of the Local Government Board and the local pension committees under this act up to an amount approved by the treasury, shall be defrayed out of moneys provided by Parliament.

11.—(1) In the application of this act to Scotland, the expression "Local Government Board" means the Local Government Board for Scotland; the expression "borough" means royal or parliamentary burgh; the expression "urban district" means police burgh; the population limit for boroughs and urban districts shall not apply; and the expression "Lunacy Act, 1890," means the Lunacy (Scotland) Acts, 1857 to 1900.

(2) In the application of this act to Ireland, the expression "Local Government Board" means the Local Government Board for Ireland; ten thousand shall be substituted for twenty thousand as the population limit for boroughs and urban districts; and the expression "asylum within the meaning of the Lunacy Act, 1890," means a lunatic asylum within the meaning of the Local Government (Ireland) Act, 1898.

(3) In the application of this act to the Isles of Scilly, those isles shall be deemed to be a county and the council of those isles the council of a county.

12.—(1) A person shall not be entitled to the receipt of an old age pension under this act until the first day of January nineteen hundred and nine and no such pension shall begin to accrue until that day.

(2) This act may be cited as the Old Age Pensions Act, 1908.

SCHEDULE.

Means of pensioner.	Rate of pension per week.
Where the yearly means of the pensioner as calculated under this act—	
Do not exceed £21 [$102.20]	5s. [$1.22].
Exceed £21 [$102.20], but do not exceed £23 12s. 6d. [$114.97]	4s. [$0.97].
Exceed £23 12s. 6d. [$114.97], but do not exceed £26 5s. [$127.75]	3s. [$0.73].
Exceed £26 5s. [$127.75], but do not exceed £28 17s. 6d. [$140.52]	2s. [$0.49].
Exceed £28 17s. 6d. [$140.52], but do not exceed £31 10s. [$153.29]	1s. [$0.24].
Exceed £31 10s. [$153.29]	No pension.

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RECENT REPORTS OF STATE BUREAUS OF LABOR STATISTICS.

MISSOURI.

Twenty-ninth Annual Report of the Bureau of Labor Statistics of the State of Missouri, for the year ending November 5, 1907. J. C. A. Hiller, Commissioner. xi, 797 pp.

This report consists of four parts, as follows: Part I, Surplus products of counties, Government land in Missouri and increase in land values, population of Missouri, good roads for Missouri, foreign immigration into Missouri during 1906–7, etc., 140 pages; Part II, Manufacturing industries, 1906, 548 pages; Part III, Labor organizations and free employment offices, 76 pages; Part IV, Public utility plants and penal and prison shops, 31 pages.

SURPLUS PRODUCTS, GOVERNMENT LAND, LAND VALUES, AND GOOD ROADS.—During 1906 the 114 counties of the State shipped surplus products aggregating in value $291,921,946. At the time of report (1907), there were 88,414 acres of land in Missouri subject to homestead or cash entry. In 1907 the assessed valuation of land in the State was $988,454,851, an increase since 1901 of $195,829,271. During 1907–8 it is proposed to expend $2,000,000 in building new highways and improving old ones.

MANUFACTURING INDUSTRIES.—A summary of the returns for 1906, embracing 10,915 establishments in 90 industrial groups, shows a total invested capital of $287,490,985, a total value of materials used of $310,280,842, and a total value of products of $510,646,581. During the year there were employed 217,833 salaried persons and wage-earners (181,298 males and 36,535 females), to whom were paid salaries and wages aggregating $104,598,954. Of wage-earners there were 192,245 (156,840 adult males, 31,398 adult females, and 4,007 children under 16 years of age). There were reported by the establishments during the year 8,279 accidents, of which only 54 resulted fatally.

The following table shows for 1906, for each of the 28 industries in the State, which paid out in wages and salaries during the year a total exceeding $100,000,000, number of establishments, capital

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invested, value of products, amount paid in wages and salaries, and number of employees (wage-earners and salaried persons) by sex:

STATISTICS OF 28 MANUFACTURING INDUSTRIES, 1906.

Industry.	Establishments.	Capital invested.	Value of products.	Wages and salaries.	Employees.	
					Male.	Female.
Bakeries	930	$3,845,612	$12,613,614	$2,741,714	3,815	1,469
Boots and shoes	56	12,835,231	31,896,954	6,518,295	10,593	5,621
Brick and tile	167	6,940,472	7,301,367	3,247,866	6,830	28
Candy and confectionery	100	1,769,143	8,107,824	1,370,656	1,960	2,062
Carriages and blacksmithing	1,187	5,130,412	10,175,190	2,905,869	5,565	136
Car shops	34	11,727,701	28,720,756	8,868,865	16,967	304
Cigars and tobacco	549	4,342,645	23,984,577	2,501,806	3,583	1,856
Clothing	640	7,016,663	18,921,391	5,338,781	4,409	8,830
Cooperage	155	2,532,686	6,549,350	1,709,118	5,202	32
Drugs and chemicals	161	5,317,532	9,698,241	1,622,421	1,682	1,192
Flour, feed, and meal	689	8,597,264	31,552,247	1,738,256	3,532	66
Foundries and machine shops	278	13,681,449	19,110,697	6,167,381	10,315	241
Furniture	100	3,460,249	6,512,935	2,545,879	3,942	266
Glass	20	3,167,752	2,900,467	1,240,160	2,251	75
Grocers' sundries	93	4,422,780	14,764,504	1,632,797	1,535	1,007
Harness	584	2,464,344	5,557,561	1,238,816	2,248	89
Iron, structural	67	1,791,129	3,939,025	1,077,752	1,753	22
Light, heat, and power	168	59,326,065	9,528,789	3,335,182	4,693	237
Lime, cement, and plaster	34	7,966,604	5,115,797	1,837,327	3,591	9
Liquors, malt	56	31,285,949	20,369,806	4,925,020	6,802	492
Lumber and ties	940	6,717,534	13,410,582	4,341,015	15,436	68
Meat packing	40	6,650,551	75,577,325	3,699,129	6,078	188
Planing mills	119	4,414,070	5,502,369	1,838,447	3,189	32
Printing and publishing	1,122	13,297,743	23,064,812	8,312,402	10,166	3,634
Smelting and refining	24	13,740,454	14,721,596	2,789,427	5,045	7
Stone and marble	197	2,299,020	3,095,559	1,308,192	2,611	19
Stoves and ranges	31	2,823,539	7,186,307	2,542,709	3,459	60
Tinning and sheet iron	698	3,535,809	8,301,525	1,725,078	3,273	286

Additional tables show, for wage-earners, the classified weekly earnings of adult males, adult females, and children under 16 years of age; number and wages of salaried employees, by sex; also, by occupations in each industry, the number of male and of female wage-earners employed, weekly wages paid, hours of labor per day and per week, and per cent of changes in wages as compared with 1905.

LABOR ORGANIZATIONS.—This section of the report presents, in eight tables, statistics relative to the labor organizations of the State. Following is a comparative summary of all labor organizations for the years 1905 and 1906:

STATISTICS OF LABOR ORGANIZATIONS, 1905 AND 1906.

Items.	Year.	
	1905.	1906.
Number of organizations reporting	609	642
Number of male members	74,303	79,160
Number of female members	2,481	2,117
Total number of members	76,784	81,277
Average per cent of trade organized	77.50	76 90
Average number of hours constituting a day's work	9.05	9.05
Established wage rate in cents per hour	33.85	33.67
Average number of days employed	284	295
Number of organizations reporting more work	127	213
Number of organizations reporting less work	33	83
Number of organizations paying out-of-work benefit	31	20
Total amount of out-of-work benefit paid	$4,936.50	$5,894.90
Number of organizations having provisions for payment of strike benefits	414	440
Average weekly strike benefit allowed per member	$5.66	$5.81
Number of organizations having provisions for payment of sick and accident benefits	126	155

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STATISTICS OF LABOR ORGANIZATIONS, 1905 AND 1906—Concluded.

Items.	Year.	
	1905.	1906.
Average weekly sick and accident benefit allowed per member	$5.10	$7.30
Total amount of sick and accident benefit paid	$35,212	$38,199
Number of organizations having provisions for payment of death benefits	379	382
Average death benefit allowed per member	$150.43	$216.82
Total amount of death benefit paid	$137,249	$161,311
Total amount paid from all benefit funds	$305,985	$322,647
Total number of strikes	40	110
Total number of lockouts	9	9
Number of strikes and lockouts settled satisfactorily	31	85
Number of strikes and lockouts compromised	6	9
Number of strikes and lockouts lost	5	9
Disputes still pending at close of report	7	16
Number of persons involved in strikes and lockouts	8,145	16,600
Number of persons directly benefited in strikes and lockouts	2,989	9,885
Number of persons directly worsted in strikes and lockouts	144	399
Amount expended in support of strikes and lockouts	$129,433	$222,653
Amount of wages lost to members through strikes and lockouts	$218,855	$189,623
Number of organizations reporting increase in wages	43	82
Number of organizations reporting reduction in hours per day	5	11
Number of appeals for arbitration	28	42
Number of disputes settled by arbitration	28	38
Number of fatal accidents	116	128
Number of nonfatal accidents	900	1,393
Total number of accidents	1,016	1,521
Number of organizations reporting agreements with employers	388	477

Considering the three largest cities of the State, in 1906 St. Louis had 208 organizations with 45,579 members (44,130 males and 1,449 females); Kansas City had 86 organizations with 9,381 members (9,286 males and 95 females), and St. Joseph had 39 organizations with 3,329 members (2,881 males and 448 females).

FREE EMPLOYMENT OFFICES.—The operations of the free employment offices, located in St. Louis, Kansas City, and St. Joseph, for the year ending September 30, 1907, are summarized in the statement following:

OPERATIONS OF FREE EMPLOYMENT OFFICES, 1907.

City.	Applications for positions.		Applications for help.		Positions secured.	
	Males.	Females.	Males.	Females.	Males.	Females.
St. Louis	4,230	315	4,185	660	3,276	229
Kansas City	3,196	353	5,521	1,526	2,670	172
St. Joseph	3,809	757	2,957	918	2,649	512
Total	11,235	1,425	12,663	3,104	8,595	913

During the season 2,126 applications for harvest hands were made to the Kansas City and St. Joseph offices, of which number only 1,515 could be supplied.

PUBLIC UTILITY PLANTS.—This section presents statistics relative to telephone systems, water works, gas plants, and electric generating stations. The statistics, which are for both private and municipal owned plants, cover capital invested, receipts and expenditures, number of employees, wages paid, and other data pertaining to the various services.

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PRISON SHOPS.—Statistics of manufacturing in the contract shops in the State penitentiary are here presented. The amount paid the State for convict labor in 1906 was $277,059. The value of goods manufactured during the year aggregated $2,279,054. Also, statistics are presented for four lesser penal and reformatory institutions.

RHODE ISLAND.

Twentieth Annual Report of the Commissioner of Industrial Statistics, made to the General Assembly at its January session, 1907. George H. Webb, Commissioner. xiv, 541 pp.

This report is made up of four parts, as follows: Part I, The ice industry of Rhode Island, 30 pages; Part II, Industrial statistics and labor laws, 116 pages; Part III, Industries and industrial opportunities by cities and towns, 187 pages; Part IV, Strikes during 1906, directory of trade unions, wages and hours of labor, etc., in the building trades in selected cities, and decisions of courts affecting labor, 208 pages.

THE ICE INDUSTRY.—This report on the ice industry of Rhode Island is based upon statistics furnished by 83 corporations, firms, and individuals operating in the State on March 1, 1906. In addition to the tons of ice harvested and manufactured during the year reported upon, prices for ice both at wholesale and at retail have been obtained from various points in the State, and are presented in comparison with prices obtained from 25 selected cities of the country.

INDUSTRIAL STATISTICS.—In this section of the report comparative statistics for the years 1904 and 1905 are given for the textile, rubber, and fine metal manufacturing industries, showing number of establishments and character of organization; highest, lowest, and average number of employees; wages and number of employees 16 years of age or over, by sex, and children under 16 years of age; cost of materials used and value of goods made and work done; number and character of machines in operation, etc.; also, aggregated statistics for all industries of the State are presented. The fine metal work embraces jewelry, jewelers' findings, silversmithing and silverware, refining, electroplating, enameling, engraving, die-sinking, and lapidary work.

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Comparative summary statistics for the years 1904 and 1905 are presented for 9 selected industries in the table following:

COMPARATIVE STATISTICS FOR 9 SELECTED MANUFACTURING INDUSTRIES, 1904 AND 1905.

Industry.	Year.	Establishments.	Average number of employees.	Total wages paid.	Cost of materials used.	Value of products, including work done.
Gold and silver reducing and refining	1904	10	77	$54,809	$3,987,262	$4,260,698
	1905	10	81	63,304	5,618,052	5,909,588
Jewelry	1904	197	6,475	3,365,274	6,657,584	14,431,756
	1905	197	7,466	3,819,586	7,516,412	16,250,157
Rubber and elastic goods	1904	9	991	416,642	1,639,301	2,582,180
	1905	9	1,957	773,704	3,067,132	4,614,356
Silversmithing and silverware	1904	10	1,919	1,439,688	2,423,361	5,323,264
	1905	10	2,143	1,606,692	2,803,829	6,574,231
Cotton goods	1904	99	24,758	8,890,166	19,665,504	34,573,450
	1905	99	25,712	9,610,269	22,202,254	36,810,724
Dyeing and finishing textiles	1904	37	7,562	3,181,597	3,639,368	9,981,457
	1905	37	8,063	3,372,493	3,974,081	11,259,063
Hosiery and knit goods	1904	15	1,721	573,680	2,271,099	3,344,655
	1905	15	1,812	605,232	2,398,280	3,562,057
Silk and silk goods	1904	8	1,291	479,991	1,695,950	2,555,986
	1905	8	1,299	455,512	1,336,409	2,152,140
Woolen and worsted goods	1904	82	21,610	9,102,479	35,936,232	52,640,763
	1905	82	23,252	10,140,162	46,285,967	61,800,256

Comparing the data for the two years, the total establishments (241) in the 5 textile industries show 60,158 employees in 1905, against 56,942 in 1904, a total wages paid of $24,183,668 in 1905, against $22,227,913 in 1904, a cost of materials used of $76,196,891 in 1905, against $63,208,053 in 1904, and a value of products of $115,584,260 in 1905, against $103,096,311 in 1904. The total establishments (1,617) in all manufacturing industries of the State show 106,758 employees in 1905, against 97,318 in 1904, a total wages paid of $47,898,140 in 1905, against $43,112,637 in 1904, a cost of materials used of $139,171,498 in 1905, against $112,872,261 in 1904, and a value of products of $234,042,897 in 1905, against $202,109,583 in 1904.

LABOR LAWS.—Under this heading are reproduced the various laws of the State pertaining to labor.

INDUSTRIES AND INDUSTRIAL OPPORTUNITIES.—This part of the report contains a comprehensive presentation of the industries and industrial opportunities of the State by cities and towns, a list of the manufacturing establishments by cities and towns, and a list of abandoned farms by towns. The information is intended to be of value to those seeking location for new industrial enterprises.

STRIKES.—This presentation consists of a chronological arrangement of the strikes occurring in the State during the year ending December 31, 1906, compiled from records kept by the state labor bureau, from the columns of the public press, and from other sources.

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DIRECTORY OF TRADE UNIONS.—This directory is a list of 1 state, 6 central, and 163 local bodies, with the name and address of the secretary of each and the time and place of meeting.

THE BUILDING TRADES.—Under this caption is presented statistics of rates of wages, hours of labor, and the Saturday half holiday in the building trades in 36 selected cities of the United States. The data were furnished by the secretaries of international and local trade unions, and are of value for purposes of comparison.

COURT DECISIONS.—Under this heading are reproduced decisions of courts relating to labor, as reported by the United States Bureau of Labor.

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RECENT FOREIGN STATISTICAL PUBLICATIONS.

BULGARIA.

Recensement des Industries Encouragées par l'État (31 dècembre, 1904). Principauté de Bulgarie, Direction de la Statistique. 1906. xxii, 101 pp.

This is the first census of manufactures taken in Bulgaria. It includes only those manufacturing establishments which are "encouraged by the State," i. e., which enjoy certain privileges according to the law of 1894, as amended in 1897. These are the exclusive privileges to manufacture within certain geographical limits for a definite number of years; export premiums; reduced railway freight rates for raw materials or for the finished products; free importation of machinery or raw materials; or preference within certain limits over foreign products, notwithstanding that higher prices are charged, in cases of purchases by the Government.

The following industries are granted some or all of these advantages and are therefore included in this enumeration: Textiles and other manufactures of fibers, candles, earthen and china ware, glass and glassware, sugar, paper and paper goods, carriages and other vehicles, chemical products, matches, glue, products of mines and of metals extracted from Bulgarian soil, cement, and lime. Only establishments which have invested at least 25,000 francs ($4,825) in land, buildings, machinery, and plant, or which employ at least 20 persons, are entitled to such encouragement. Owing to these limitations, several important branches of industry are omitted from this manufacturing census, such as building and construction operations, transportation, printing, bookbinding, tobacco, mineral waters, etc. Nevertheless, it is stated that the census includes the greater part of the factory industry in Bulgaria.

The census embraces both the establishments and the workingmen employed, two schedules having been provided, one for the establishment and another for the employee. The results of the census are presented in 20 general tables, of which 13 deal mainly with the establishments, and 7 with the employees. The information obtained and presented includes the following subjects: (*a*) For establishments—capital invested, persons employed, nature of ownership,

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date of establishment, mechanical power used, number of days operated, value of raw materials, quantity and value of fuel consumed, and quantity and value of products; (*b*) for employees—nationality, education, conjugal condition, ownership of real estate, age, methods of wage payment, wages, and hours of labor.

Altogether 166 establishments were included in the enumeration. The capital invested amounted to 30,697,285 francs ($5,924,576). The total number of persons employed was 7,026, of whom 877 were salaried employees and 6,149 wage-workers, 4,411 or 71.7 per cent of the latter being males and 1,738 or 28.3 per cent females. The total value of raw materials was 21,913,594 francs ($4,229,324), and the value of products 32,776,975 francs ($6,325,956).

Of the 166 establishments enumerated, 57 manufactured food products, and 51 textiles. The more important data obtained by the census for the separate industrial groups are shown in the following table:

STATISTICS OF ESTABLISHMENTS, BY INDUSTRIES, ACCORDING TO THE CENSUS OF DECEMBER 31, 1904.

Industry.	Number of establishments.	Capital invested, Dec. 31, 1904.	Salaried employees.	Wage-workers.			Horsepower of mechanical motors.	Value of new materials.	Value of products.
				Male.	Female.	Total.			
Mines	3	$149,397	72	1,347	.....	1,347	71	.....	$264,010
Metals	8	71,352	28	238	.....	238	43	$29,176	96,942
Earthen and china ware	6	371,891	37	170	.....	170	218	9,898	84,995
Chemical products	15	260,350	44	128	65	193	103	229,921	280,504
Food products	57	2,775,530	319	877	106	983	2,420	2,240,809	2,961,248
Textiles	51	1,281,776	270	1,178	1,565	2,743	1,705	1,342,648	2,072,225
Wood manufactures	8	113,796	39	185	.....	185	268	82,858	127,077
Hides and leather	13	127,639	34	237	.....	237	93	274,724	323,757
Paper	1	35,788	4	20	2	22	26	2,040	5,122
All other	4	737,057	30	31	.....	31	4,030	17,250	90,076
Total	166	5,924,576	877	4,411	1,738	6,149	8,977	4,229,324	6,325,956

Of the 166 establishments included, 154 owned their buildings. These were distributed, according to the amount of capital invested, as follows:

ESTABLISHMENTS OWNING THEIR BUILDINGS, BY AMOUNT OF CAPITAL INVESTED.

Amount of capital invested by each establishment.	Establishments.		Total capital invested.	
	Number.	Per cent.	Amount.	Per cent.
Less than 25,000 francs ($4,825)	28	18.2	$78,538	1.3
25,000 francs ($4,825) or less than 50,000 francs ($9,650)	29	18.8	206,545	3.5
50,000 ($9,650) or less than 100,000 francs ($19,300)	29	18.8	382,752	6.5
100,000 francs ($19,300) or less than 250,000 francs ($48,250)	43	27.9	1,262,103	21.4
250,000 francs ($48,250) or less than 500,000 francs ($96,500)	13	8.4	851,793	14.4
500,000 francs ($96,500) or less than 750,000 francs ($144,750)	5	3.3	593,974	10.1
750,000 francs ($144,750) or less than 1,000,000 francs ($193,000)	4	2.6	637,213	10.8
1,000,000 francs ($193,000) or over	3	2.0	1,892,773	32.0
Total	154	100.0	5,905,691	100.0

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The greater number of the establishments, namely, 129, or 83.7 per cent, had a capital of less than 250,000 francs ($48,250) each; 22 establishments had a capital of from 250,000 francs ($48,250) to 1,000,000 francs ($193,000) each,; and 3 had a capital of over 1,000,000 francs ($193,000). The classification of the establishments by the number of workingmen employed is given in the following table:

ESTABLISHMENTS, BY NUMBER OF WAGE-WORKERS EMPLOYED.

Wage-workers employed.	Establishments.		Total wage-workers.	
	Number.	Per cent.	Number.	Per cent.
None	10	6.0	.....	.....
Less than 5	17	10.2	51	0.8
5 to 9	28	16.9	204	3.3
10 to 19	45	27.1	634	10.3
20 to 29	23	13.9	549	8.9
30 to 49	18	10.9	679	11.1
50 to 99	15	9.0	1,060	17.2
100 to 499	9	5.4	1,701	27.7
500 to 999	.....	.....	.....	.....
1,000 or more	1	.6	1,271	20.7
Total	166	100.0	6,149	100.0

It is shown that the average number of workingmen per factory was 37, but 100 establishments, or 60.2 per cent, employed less than 20 workers each.

The next table shows the employees grouped according to age and sex:

NUMBER AND PER CENT OF WAGE-WORKERS EMPLOYED, BY AGE AND SEX.

Age.	Male.		Female.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
12 years or less	22	0.5	71	4.1	93	1.5
13 to 15 years	171	3.9	468	26.9	639	10.4
16 to 20 years	860	19.5	919	52.9	1,779	28.9
21 to 30 years	1,581	35.9	123	7.1	1,704	27.7
31 to 40 years	959	21.7	53	3.0	1,012	16.5
41 to 50 years	491	11.1	58	3.3	549	8.9
51 to 60 years	235	5.3	36	2.1	271	4.4
61 years or over	92	2.1	10	.6	102	1.7
Total	4,411	100.0	1,738	100.0	6,149	100.0

Of all the persons employed, 93, or 1.5 per cent, were below 13 years of age, and 639, or 10.4 per cent, from 13 to 15 years of age, making a total of 732 children, or 11.9 per cent of all the workers. The largest class was between 16 and 30 years of age, namely, 56.6 per cent. The employment of persons over 50 years of age was exceptional. Considerable differences are noticed between the sexes with regard to age distribution. Of the male employees, only 4.4 per cent, and of the female employees 31.0 per cent were below 16 years of age. On the other hand, very few adult women were employed, only 280, or 16.1 per cent, being over 20 years of age.

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The usual method of payment was by the day, over one-half of all the workers receiving daily wages. A little less than one-fourth worked for other time wages, such as by the week, month, or year. Piece wages or contract wages were comparatively infrequent. Piece wages were almost limited to the textile industry, and contract wages to the mining industry. The following data in regard to the methods of payment are given for 6,110 out of the 6,149 employees:

NUMBER OF WAGE-WORKERS REPORTING METHOD OF WAGE PAYMENT, BY SEX.

Method of wage payment.	Number of wage-workers reporting.			
	Male.	Female.	Total.	
			Number.	Per cent.
By day	2,081	1,256	3,337	54.6
By week, month, or year	1,262	182	1,444	23.6
By piece	440	297	737	12.1
By contract	592	.....	592	9.7
Total	4,375	1,735	6,110	100.0

The daily wages have been ascertained for 5,262 persons,[a] of whom 3,683 were male and 1,579 female employees. Of this total only 803, or 15.3 per cent, received more than 2 francs ($0.386) per day. The remaining employees fall into two nearly equal classes, 2,282, or 43.4 per cent, receiving between 1 franc ($0.193) and 2 francs ($0.386), and 2,177, or 41.3 per cent, receiving 1 franc ($0.193) or less.

There is a considerable difference between the wages of male and female workers. Of the latter only 7, or 0.4 per cent, received over 2 francs ($0.386) per day; 153, or 9.7 per cent, received from 1 franc ($0.193) to 2 francs ($0.386) per day; and 1,419, or 89.9 per cent, received 1 franc ($0.193) or less per day. Of the male workers, 796, or 21.6 per cent, received over 2 francs ($0.386) per day; 2,129, or 57.8 per cent, received from 1 franc ($0.193) to 2 francs ($0.386), and 758, or 20.6 per cent, received 1 franc ($0.193) or less. The following table shows the 5,262 workers, by sex and wage groups:

NUMBER AND PER CENT OF WAGE-WORKERS FOR WHOM DAILY WAGES WERE ASCERTAINED, BY SEX AND WAGE GROUPS.

Daily wages.	Males.		Females.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
0.30 franc ($0.058) or less	24	0.7	99	6.3	123	2.3
0.30 franc ($0.058) to 0.50 franc ($0.097)	60	1.6	417	26.4	477	9.1
0.50 franc ($0.097) to 0.80 franc ($0.154)	203	5.5	642	40.7	845	16.0
0.80 franc ($0.154) to 1 franc ($0.193)	471	12.8	261	16.5	732	13.9
1 franc ($0.193) to 1.50 francs ($0.290)	1,142	31.0	125	7.9	1,267	24.1
1.50 francs ($0.290) to 2 francs ($0.386)	987	26.8	28	1.8	1,015	19.3
Over 2 francs ($0.386)	796	21.6	7	.4	803	15.3
Total	3,683	100.0	1,579	100.0	5,262	100.0

[a] In addition to 3,337 paid by the day this total includes 1,444 paid by the week, month, or year and 481 paid by piece or contract for whom daily wages were computed.

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The distribution of wage-workers by industries, sex, and wage groups is shown in the following table:

NUMBER OF MALE AND OF FEMALE WAGE-WORKERS FOR WHOM DAILY WAGES WERE ASCERTAINED, BY INDUSTRIES AND WAGE GROUPS.

Industry.	Total wage-workers.	Males receiving daily wages of—				Females receiving daily wages of—			
		1 franc ($0.193) or less.	1 franc ($0.193) to 2 francs ($0.386).	Over 2 francs ($0.386).	Total.	1 franc ($0.193) or less.	1 franc ($0.193) to 2 francs ($0.386).	Over 2 francs ($0.386).	Total.
Textiles	2,629	338	593	230	1,161	1,310	151	7	1,468
Food products	935	57	612	177	846	88	1	.....	89
Mines	775	195	482	98	775	.....	.....	.....	.....
Metals	214	68	75	71	214	.....	.....	.....	.....
Hides and leather	210	48	95	67	210	.....	.....	.....	.....
Wood manufactures	182	14	78	90	182	.....	.....	.....	.....
Earthen and china ware	158	18	127	13	158	.....	.....	.....	.....
Chemical products	108	10	47	31	88	19	1	.....	20
Paper	22	7	12	1	20	2	.....	.....	2
All other	29	3	8	18	29	.....	.....	.....	.....
Total	5,262	758	2,129	796	3,683	1,419	153	7	1,579

The wages were lowest in the textile industries, mainly because of the large number of women employed, and highest in the manufacture of wood products. The average daily wage for all male workers was 1.67 francs ($0.322) per day; for the female workers it was 0.71 franc ($0.137), and for both sexes 1.38 francs ($0.266) per day. In the wood industry the average wage was 2.48 francs ($0.479), in metal manufacturing 2.16 francs ($0.417), and in the textile industry, 1.04 francs ($0.201).

Interesting data are presented in the following table, showing the wage distribution for five separate age groups for each sex.

NUMBER OF MALE AND OF FEMALE WAGE-WORKERS FOR WHOM DAILY WAGES WERE ASCERTAINED, BY WAGE AND AGE GROUPS.

Daily wages per worker.	12 years or less.	13 to 15 years.	16 to 20 years.	21 to 60 years.	61 years or over.	Total.
MALES.						
0.30 franc ($0.058) or less	2	8	14	.....	.....	24
0.30 franc ($0.058) to 0.50 franc ($0.097)	5	9	34	12	.....	60
0.50 franc ($0.097) to 0.80 franc ($0.154)	1	36	126	38	2	203
0.80 franc ($0.154) to 1 franc ($0.193)	9	82	240	137	3	471
1 franc ($0.193) to 1.50 francs ($0.290)	1	4	259	860	18	1,142
1.50 francs ($0.290) to 2 francs ($0.386)	.....	.....	90	876	21	987
Over 2 francs ($0.386)	.....	3	31	738	24	796
Total	18	142	794	2,661	68	3,683
FEMALES.						
0.30 franc ($0.058) or less	27	65	6	1	.....	99
0.30 franc ($0.058) to 0.50 franc ($0.097)	32	186	135	64	.....	417
0.50 franc ($0.097) to 0.80 franc ($0.154)	5	108	448	78	3	642
0.80 franc ($0.154) to 1 franc ($0.193)	2	44	113	97	5	261
1 franc ($0.193) to 1.50 francs ($0.290)	.....	24	81	20	.....	125
1.50 francs ($0.290) to 2 francs ($0.386)	.....	.....	22	6	.....	
Over 2 francs ($0.386)	.....	1	4	2	.....	
Total	66	428	809	268	8	

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For males below 16 years of age the usual range was between 0.50 franc ($0.097) and 1 franc ($0.193), 128 out of 160, or 80 per cent, of this age group receiving such wages. Of the male persons between 16 and 20 years of age, 63 per cent received from 0.80 franc ($0.154) to 1.50 francs ($0.29); and of the adults, 65 per cent received from 1 franc ($0.193) to 2 francs ($0.386). In the case of female employees, 89 per cent of the girls 12 years of age or less received 0.50 franc ($0.097) or less per day; of those from 13 to 15 years of age 69 per cent received from 0.30 franc ($0.058) to 0.80 franc ($0.154); of the young women 16 to 20 years of age, more than one-half received from 0.50 franc ($0.097) to 0.80 franc ($0.154) and 86 per cent received from 0.30 franc ($0.058) to 1 franc ($0.193); again, of the adult women 66 per cent received from 0.50 franc ($0.097) to 1 franc ($0.193).

In the next two tables the wage-workers are grouped according to hours of labor and age and hours of labor and sex, respectively:

NUMBER AND PER CENT OF WAGE-WORKERS EMPLOYED, BY HOURS OF LABOR AND AGE GROUPS

Age groups.	8 hours or less.		8 to 10 hours.		10 to 12 hours.		12 to 15 hours.		Over 15 hours.		Total.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
12 years or less	4	4.3	9	9.7	62	66.6	17	18.3	1	1.1	93
13 to 15 years	13	2.0	66	10.3	424	66.4	130	20.4	6	.9	639
16 to 20 years	41	2.3	424	23.8	992	55.8	296	16.6	26	1.5	1,779
21 to 30 years	42	2.4	777	45.6	717	42.1	117	6.9	51	3.0	1,704
31 to 40 years	16	1.6	492	48.6	371	36.7	84	8.3	49	4.8	1,012
41 to 50 years	9	1.6	259	47.2	189	34.4	68	12.4	24	4.4	549
51 to 60 years	6	2.2	123	45.4	104	38.4	29	10.7	9	3.3	271
61 years or over	3	2.9	38	37.3	43	42.2	15	14.7	3	2.9	102
Total	134	2.2	2,188	35.6	2,902	47.2	756	12.3	169	2.7	6,149

NUMBER AND PER CENT OF WAGE-WORKERS EMPLOYED, BY HOURS OF LABOR AND SEX.

Sex.	8 hours or less.		8 to 10 hours.		10 to 12 hours.		12 to 15 hours.		Over 15 hours.		Total.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
Male	87	2.0	2,005	45.4	1,843	41.8	307	7.0	169	3.8	4,411
Female	47	2.7	183	10.5	1,059	60.9	449	25.9	.....	.....	1,738
Total	134	2.2	2,188	35.6	2,902	47.2	756	12.3	169	2.7	6,149

Of the wage-workers enumerated, 3,827 persons, or 62.2 per cent, worked more than ten hours per day. Fifteen per cent worked more than twelve hours per day. For the female employees the hours are found to be longer, 86.8 per cent working over ten hours a day, while for the male employees the proportion working over ten hours per day is only 52.6 per cent. This is explained by the long hours of labor in the textile industry. The distribution of employees by age and hours of work shows decidedly longer hours for the younger age groups.

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GREAT BRITAIN.

Sixth Report of Proceedings under the Conciliation (Trade Disputes) Act, 1896. 1905–1907. (Published by the Board of Trade.) 110 pp.

This is a report of the proceedings under the Conciliation Act, 1896, and covers a period of two years, from July 1, 1905, to June 30, 1907. During the period 51 cases were presented for settlement, of which 23 occurred in the last six months of the period (January to June, 1907). The total number of cases in which a stoppage of work occurred was 16.

In the table following is shown the number of cases dealt with and settled in each of the periods covered by the six reports since August, 1896:

CASES DEALT WITH AND SETTLED UNDER THE CONCILIATION (TRADE DISPUTES) ACT, 1896, FROM AUGUST, 1896, TO JUNE, 1907.

Report and period covered.	Cases dealt with.	Cases settled under the act.
First report (August, 1896, to June, 1897)	35	19
Second report (July, 1897, to June, 1899)	32	22
Third report (July, 1899, to June, 1901)	46	29
Fourth report (July, 1901, to June, 1903)	41	29
Fifth report (July, 1903, to June, 1905)	27	24
Sixth report (July, 1905, to June, 1907)	51	45
Total	232	168

Of the 232 cases dealt with since August, 1896, in 140 cases the application for arbitration or conciliation was made by both parties to the dispute, in 60 cases by workmen, in 22 cases by employers, and in the remaining by arbitrators who had failed to agree, etc. The number of cases of joint application during the two years under review was 46, or 90 per cent of all the cases dealt with.

Of the 51 disputes dealt with during the two years covered by the report, 14 were in the building trades, 13 in the boot and shoe trade, 7 in the metal, engineering, and shipbuilding trades, 7 in the printing and allied trades, 4 in mining and quarrying, and 6 in other trades. During the period since the act came into operation, 82 cases have arisen in the building trades, 45 in the metal, engineering, and shipbuilding trades, 27 in mining and quarrying, 20 in the boot and shoe trade, 17 in transportation, 14 in the printing and allied trades, 11 in the textile trades, and 16 in other trades.

Among the cases settled during the period under review, 2 were of special importance—the Nottingham lace trade dispute and the music hall dispute. Of the 13 cases in the boot and shoe industry, 4 had reference to applications made by the work people for a minimum wage to be fixed or for the raising of a minimum already in existence. The awards made fixed a minimum wage for lasters and

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finishers in London, for clickers and pressmen in Kettering, and for all classes of adult male boot and shoe operatives in Anstey and Stafford. Some of the building trades cases were also of importance, deciding, as they did, the wages, hours, or conditions of employment of various classes of workmen in the building trades of London, Manchester, Glasgow, Birkenhead, Wakefield, and Coventry. Among the cases which occurred in the printing and publishing trades were those at London, Glasgow, Bolton, and Reading. The award in the Glasgow case fixed the pay of compositors employed on newspaper work, and that in the Bolton case the pay of printers' helpers.

Appendixes give tabular summary and detailed statement of each case presented to the board during the period covered by this report; text of awards and agreements made under the Conciliation Act during the same period; rules of conciliation boards and other agreements containing clauses which provide for reference of disputes to the Board of Trade, failing their settlement by other agencies, and a reproduction of the text of the Conciliation Act, 1896.

Report of the Departmental Committee Appointed to Consider Whether the Post-Office should Provide Facilities for Insurance under the Workmen's Compensation Acts. 1907. 170 pp.

This document consists of the report of a departmental committee which was appointed March 1, 1907, by the postmaster-general (1) To consider whether it is practicable, and, if practicable, whether it is desirable, for the post-office to provide facilities for the insurance of employers in respect to their liabilities under the Workmen's Compensation Acts, either generally or subject to limitations. (2) And further, to consider whether it is desirable that steps should be taken to encourage the use of the present life insurance system of the post-office; and, if so, what steps.

The committee held 13 meetings, 10 of which were occupied in the taking of evidence, and 23 witnesses were examined. Evidence was given by officials from the post-office and home office, factory inspectors, representatives of insurance companies, of agriculture, of the building, fishing, and coasting trades, and of the Women's Trades Union League, etc. In reply to questions embodied in circular letters, there were reviewed the views of 66 chambers of agriculture and farmers' associations and of a number of miscellaneous industries. The report of the committee was handed to the postmaster-general on June 5, 1907.

It appeared from an estimate obtained by the Home Office that the number of workmen added by the act of 1906 to the classes already entitled to compensation for accidents incurred in the course of their employment was approximately 6,000,000. A considerable proportion of these workmen, however, would be in the service of employers

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fully cognizant of the advantages of insurance and of the facilities for effecting it, or strong enough to bear the risks themselves; so that, in considering to what extent the act might fail in its object through lack of knowledge or of facilities for insurance, the figure of 6,000,000 must be largely reduced. Yet, in the opinion of the committee, there would remain a considerable number of small employers so likely to be ignorant of their fresh responsibilities as to make it important to take special measures for giving the widest publicity to the provisions of the act before it came into operation. There was a general consensus of opinion among the witnesses that, whatever facilities were offered for insurance, there would always remain a number of small employers whom nothing short of a system of compulsion would induce to insure. It was obvious to the committee that the post-office could do nothing to help this class, and that the necessity for post-office interference, if it existed at all, must lie among the small employers who were anxious to meet their liabilities, but experienced difficulty in obtaining insurance.

The committee were led, therefore, to inquire into the adequacy of the facilities for insurance existing, or likely to exist, throughout the country, both as regards cost to the insurer and geographical distribution. Information as to the facilities for insurance were obtained from the large insurance companies, and the Association of Accident Companies delegated witnesses, who gave full and valuable evidence. The delegates of the companies gave a pledge that they would be prepared to undertake the insurance of every class of subject. The evidence of the companies and of the independent witnesses showed that there was keen competition among the companies for business, that the whole country was covered by the organization of the insurance offices, and that all classes were afforded the opportunity of readily effecting insurance with offices of good standing.

The extensive facilities which already exist, and the uncertainty of the situation, appeared to the committee to constitute weighty reasons against any hasty action on the part of the Government. At the outset two difficulties would arise: (1) No scheme whatever involving the post-office as principal, or money-spending agent, could be set up without special legislation. (2) The act coming into force on July 1, 1907, the post-office could not possibly organize an effective department, requiring a fresh staff, before that date. These objections were considered fatal to the immediate creation of a scheme of state insurance against liability under the Workmen's Compensation Acts, and the committee was impressed by certain special difficulties which would beset a Government department, such as the post-office, in dealing with insurance of this character.

As an alternative, which it was contended would be free from some of the difficulties previously indicated and yet would afford valuable

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facilities to the public, schemes not covering the whole category of risks were presented by several witnesses. These limited schemes may be divided into three classes: (1) Insurance of small employers only, to be defined either by the number of workmen employed or by the amount of wages paid. (2) Insurance confined to special classes of employment, especially those involving little risk, as domestic servants, shop assistants, clerks, teachers, etc. (3) Insurance in any class of employment against a part only of the liability. While each of these classes of schemes had, no doubt, something to recommend it, the committee were compelled to point out that many of the objections already made to a complete state scheme applied with but little less force to a limited scheme; also, there were certain particular objections made to each of the suggested forms of limitation.

The schemes that have been considered so far have involved the action of the State as principal; but there were other methods suggested whereby the organization of the post-office acting as agent might be utilized for increasing the facilities for transacting insurance business throughout the country.

As a result of the inquiry, the committee felt unable to suggest for immediate adoption any scheme involving post-office action as principal or as agent. However, the committee thought it possible for the post-office to afford assistance toward publicity in two ways: (1) By the exhibition at all post-offices of a notice drawing attention to the liabilities imposed by the act, and the advisibility of insurance against them, to be framed in conjunction with the Home Office. (2) By an offer to distribute at post-office counters an alphabetical list of accident insurance companies, with the definite notification that the list is prepared by the companies and in no way commits the post-office.

The present report covers only the first part of the inquiry directed by the postmaster-general; the consideration and report on the second part the committee proposed to defer until a later date.

INDIA.

Report of the Textile Factories Labor Committee Appointed by the Government of India, December, 1906, to Inquire into the Conditions of Factory Labor in India. 1907. 81 pp.

This document consists of the report of the textile factories labor committee appointed December 17, 1906, by the government of India on the recommendation of the secretary of state for India, to inquire into the conditions of factory labor in India.

The investigation was directed, in the first instance, toward ascertaining the actual conditions prevailing in India, and the specific points of inquiry referred to the committee were as follows:

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(1) Whether the working hours of adult males should be limited and whether the physique of operatives is affected by long hours; (2) whether before children are allowed to work in factories certificates of age and fitness should be required; (3) whether the minimum age of children should be raised beyond 9; (4) whether as the result of employment as adults of persons between the ages of 12 and 14, there has been physical deterioration requiring the creation by law of a special class of workers known as young persons; (5) whether a separate staff of medical factory inspectors should be entertained.

Though the inquiries to be made by the committee were directed more particularly toward the settlement of the five preceding questions, they were requested to put forward recommendations for the amendment of the existing law or practice, if they were of the opinion "that the present hours of work of operatives are excessive, that the conditions of factory labor are otherwise injurious or oppressive, or that abuses exist in connection with the employment of children or young persons." The homes and surroundings of the mill hands were also given consideration.

This investigation to be made by the committee was intended to be preliminary only in character; but should it establish the existence of abuses which required to be remedied, a representative commission was to be appointed to consider the whole subject comprehensively before any radical changes in the present factory law were made.

The committee visited the cities of Bombay, Ahmedabad, Calcutta, Madras, Delhi, Agra, Cawnpore, and Nagpur, where textile mills were inspected and evidence taken from local officials, mill owners, managers, operatives, etc. The report on its inquiries was submitted April 5, 1907.

The report of the work of the committee is classed under the following general heads: Administration of factory laws, system of inspection, certificates of age and physical fitness, minimum age for employment of children, employment of women, adult male labor, physique of operatives, "particulars" of work and wages, proposals for the creation of a new class of workers to be known as "young persons," sanitation of factories and mills, means of escape in case of fire, guarding of machinery, etc.

In the conclusions arrived at by the committee were suggested amendments to the present Indian Factories Act relating to administration, fencing of machinery, holidays, and the "occupier" of factories and workshops.

There were twenty definite suggestions made by the committee—

1. That there may be as little delay as possible in giving effect to proposals in contemplation for improving the homes and home surroundings of mill hands.

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2. That arrangements be made to secure uniformity of administration of the factory act throughout India.

3. That systems of inspection, the strength and composition of the staff of inspectors should be considered with a view to securing efficiency.

4. That medical inspectors whose whole time should be devoted to their duties under the factories act be appointed.

5. That certificates of age and physical fitness for employment be required prior to half-time employment, and prior to employment as an adult, * * * and that they be the personal property of the persons to whom they apply.

6. That consideration be given to the suggestion made by many experienced witnesses that elementary teachers to be paid by the mill owners should be appointed for instruction of half-time children in suitable places on the mill premises.

7. That clear and definite laws be made, requiring that half-time children shall be employed only in sets—either on the morning and afternoon set system, or the double-set system largely adopted in Indian mills. That efficient measures be taken to secure that the children work only in their proper sets, and that the prescribed hours of labor are not exceeded.

8. That night work of women be prohibited.

9. That by suitable administrative regulations young children should be prevented from accompanying their parents to rooms in which they incur risk from running machinery or the inhalation of dust or impure vapors.

10. That the period of employment in Indian factories shall be either between the hours of 5.30 a. m. and 6 p. m., or 6 a. m. and 6.30 p. m. That the engine shall cease running for half an hour between the hours of noon and 2 p. m. * * *

11. That the names of all persons under the age of 16 years be entered in the prescribed register, but that certificates of age and physical fitness be only required up to the age of 14 years.

12. That samples of air collected under prescribed conditions be taken in works in all parts of India, with a view to hereafter decide upon a suitable standard of ventilation.

13. That wet and dry bulb thermometers be placed in all humid cotton cloth factories, readings taken at fixed times, and returns forwarded monthly; these returns to be eventually considered with a view to deciding the amount of moisture necessary for manufacturing purposes, bearing in mind the health of the operatives.

14. That a standard of purity for water to be used for introducing moisture into the mills and factories be fixed.

15. That the dates of lime washing be entered in a prescribed register.

16. That particular attention be paid to carrying off dust when generated in quantities likely to cause injury to health.

17. That when inquiries now going on are complete, should it be found that workers in woolen mills are liable to contract anthrax, the special precautions framed under the English Factory Act be considered.

18. That the latrine accommodation be increased to one seat for every twenty-five persons and that separate urinal accommodation be provided in all mills.

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19. That doors in the various rooms be hung in such a way that they can be immediately opened from inside and be constructed so as to open outward. (This is recommended as a safety measure in case of fire.)

20. That in certain respects—chiefly in ginning mills—more attention be paid to the fencing of dangerous mill gearing and machinery.

ITALY.

Statistica degli scioperi avvenuti in Italia nell'Anno 1904. Ufficio del Lavoro, Ministero di Agricoltura, Industria, e Commercio. 1907. viii, 317 pp.

This is the twelfth of a series of reports on strikes and lockouts published by the Italian Department of Agriculture, Industry, and Commerce. The present volume, which is the first report compiled by the Bureau of Labor of that department on this subject, shows in detailed tables and text statements the most important facts in reference to the strikes occurring during the year 1904, the strikes being separated into two categories: (1) Those occurring in industries other than agriculture, and (2) those taking place in agricultural industries alone. The report also contains a summary table showing the number of strikes and strikers for each year of the period 1879 to 1904.

The present volume differs considerably from those previously published by the General Statistical Office of the same department. There are in all nine tables giving information in regard to the strikes, as follows: (1) Number of strikes, establishments, and strikers, and the relation to the industry and labor organization; (2) strikes, by months; (3) strikes and strikers, by size of establishment; (4) women in strikes; (5) children in strikes; (6) duration and results of strikes; (7) causes of strikes; (8) cost of strikes; (9) workingmen discharged after strikes. The data in regard to these subjects are far from complete. The strikes for each of the 44 industries named in the report are treated in a separate chapter, but for many of the industries certain tables are missing. Summary statements are given only partly for several of the tables. The difference between this report and the preceding ones is so great that any effort to compare the data would be futile except in a few cases.

Strikes in 1904.—During the year 1904 there were 840 strikes, of which 208 were agricultural and 632 occurred in other industries. The 208 strikes among agricultural workers involved a total of 94,756 strikers, and the 630 strikes in other industries (data for 2 strikes not being available) involved 118,356, making a total of 213,112 strikers. The number of strikes and strikers by industries is shown in the following table, in which the 44 industries given in the report have been reduced to 17 groups to conform as nearly as possible to the classification of the preceding years.

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STRIKES AND STRIKERS, BY INDUSTRIES, 1904.

Industry.	Strikes.	Strikers.
Agriculture	208	94,756
Mining and quarrying	63	23,606
Foundry products, machinery, apparatus, and shipbuilding	65	4,422
Precious-metal working	4	578
Stone, clay, and glass	45	6,701
Building and engineering work	100	30,793
Chemical products	20	1,344
Woodwork, furniture, baskets, etc	21	1,262
Paper	6	125
Printing	13	242
Textiles	130	20,049
Clothing, hats, straw goods	20	1,798
Hides and shoes	27	1,202
Food products	54	10,528
Fishing	2	499
Transportation	23	8,192
Public utilities and monopolies	37	6,990
Total	838	[a] 213,112

[a] The number of strikers in industries other than agriculture is given in the report as 118,356. This number, although 25 in excess of the sum of the items here shown for those industries, has been used in determining the total strikers for all industries.

The greatest number of strikes occurred among agricultural workers, 24.8 per cent of all strikes and 44.5 per cent of all strikers being found in that industry. In building and engineering work and in mining and quarrying the number of strikers totaled 14.4 per cent and 11.1 per cent, respectively, of the entire number reported. In the textile industries the number of strikes represented 15.5 per cent and the number of strikers 9.4 per cent of the total number. The following table shows, for the agricultural and for the other industries, separately, the results of strikes, arranged according to principal causes:

STRIKES, BY CAUSES AND RESULTS, 1904.

[Strikes due to two or more causes have been tabulated under each cause; hence the totals for this table do not agree with those for the preceding table and the second table on page 573.]

Cause or object.	Agricultural occupations.					Other industries.				
	Succeeded.	Succeeded partly.	Failed.	Not reported.	Total.	Succeeded.	Succeeded partly.	Failed.	Not reported.	Total.
For increase of wages	38	49	31	2	120	89	128	101	3	321
Against reduction of wages	6	2	1	.....	9	17	12	23	.....	52
For reduction of hours	19	18	29	1	67	24	21	24	.....	69
Against increase of hours	1	3	1	.....	5	3	5	6	.....	14
Other causes	36	13	39	9	97	103	62	142	8	315
Total	100	85	101	12	298	236	228	296	11	771

Questions of wages were the most frequent causes of strikes in 1904, in agricultural occupations 43.3 per cent and in other industries 48.4 per cent of all strikes being due wholly or in part to this cause. The demand for reduction of hours occasioned 22.5 per cent of the strikes among agricultural workers and 8.9 per cent of those among employees in other industries. The distribution of causes of strikes among the

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various groups of industries other than agricultural is shown in the following table:

STRIKES, BY INDUSTRIES AND CAUSES, 1904.

[Strikes due to two or more causes have been tabulated under each cause; hence the totals for this table do not agree with those for the following table and the first table on page 572.]

Industry.	For increase of wages.	Against reduction of wages.	Other causes affecting wages.	For reduction of hours.	Other causes affecting hours.	Against discharge and other punishments.	For discharge of superintendents, etc.	Other causes.	Total.
Mining and quarrying	47	3	5	3	1	2	1	19	81
Foundry products, machinery, apparatus, and shipbuilding	30	4	3	9	2	14	2	16	80
Precious-metal working	1	.....	.....	1	1	1	.....	5	9
Stone, clay, and glass	32	5	1	2	2	5	1	4	52
Building and engineering work	58	4	6	20	12	1	1	13	115
Chemical products	9	1	3	3	.....	5	2	2	25
Woodwork, furniture, baskets, etc	8	2	.....	.....	1	3	2	7	23
Paper	2	2	1	1	.....	1	.....	1	8
Printing	5	.....	.....	2	.....	6	.....	1	14
Textiles	45	19	7	11	13	22	14	25	156
Clothing, hats, straw goods	6	3	4	.....	3	3	2	3	24
Hides and shoes	12	3	2	4	1	2	1	8	33
Food products	32	2	2	5	2	7	2	19	71
Fishing	1	.....	.....	.....	.....	1	.....	.....	2
Transportation	13	3	1	.....	.....	1	1	5	24
Public utilities and monopolies	20	1	.....	8	2	9	5	9	54
Total	321	52	35	69	40	83	34	137	771

In the following table are shown, as far as data are available, the number of working days lost, the aggregate loss in wages, and the amount of strike benefits paid in strikes in all industries other than agriculture during 1904:

DAYS OF WORK LOST, WAGE LOSS, AND AMOUNT OF BENEFITS PAID IN STRIKES 1904, BY INDUSTRIES.

Industry.	Total strikes.	Strikes for which aggregate days lost was reported.	Aggregate days lost.	Strikes for which total wage loss was reported.	Total wage loss.	Strikes in which—		Amount of strike benefits paid.
						Strike benefits were paid.	Amount of strike benefits was reported.	
Mining and quarrying	63	61	247.376	43	$62,543.79	6	3	$1,173.44
Foundry products, machinery, apparatus, and shipbuilding	65	64	70,315	58	18,890.64	17	12	3,873.92
Precious-metal working	4	4	27,922	4	13,084.83	3	2	219.06
Stone, clay, and glass	45	44	124,531	38	40,237.05	8	6	2,731.34
Building and engineering work	100	97	229,504	82	90,698.73	13	8	2,306.45
Chemical products	20	19	9,243	15	2,640.39	2	2	96.50
Woodwork, furniture, baskets, etc	21	21	18,578	18	7,903.70	5	3	311.70
Paper	6	6	882	6	233.47	2	2	36.48
Printing	13	11	3,682	11	1,708.49	3	2	27.82
Textiles	130	128	247,480	60	36,749.44	9	6	1,322.56
Clothing, hats, straw goods	20	20	52,374	18	14,255.35	5	4	329.45
Hides and shoes	27	26	18,861	24	10,439.11	10	6	971.47
Food products	54	54	205,686	51	83,205.89	14	8	13,867.58
Fishing	2	(a)	(a)	(a)	(a)	(a)	(a)	(a)
Transportation	23	23	80,901	16	44,887.54	4	4	50.57
Public utilities and monopolies	37	37	30,846	31	5,715.24	2	2	1,241.22
Total	630	615	1,368,181	475	433,193.66	103	70	28,559.56

a Not reported.

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In the 615 strikes for which the facts were reported, the total number of working days lost was 1,368,181, or an average of 2,225 days each. The aggregate wage loss in 475 strikes was $433,193.66, or $911.99 for each strike. Strike benefits were paid in the case of 70 strikes, the average amount per strike being $407.99.

RUSSIA.

Svod Otchotov Fabrichnykh Inspectorov za 1904 god (Digest of reports of factory inspectors for 1904). Published by Otdiel promyshlennosti, Ministerstvo torgovli i promyshlennosti (Bureau of Industry of the Ministry of Commerce and Industry). 1907. pp. xv, 212.

Annual digests of the reports of the factory inspectors have been published by the Russian Government since 1900. The one under consideration is the fifth in the series. In addition to the accounts of the administrative activities of the inspectors, the reports contain many important annual data concerning the manufactures of Russia, such as the number of establishments and employees, the number of women and children employed, idle establishments, strikes, industrial accidents, wages, etc. The data refer only to those establishments and industries which are subject to factory inspection, as stated on page 978 of Bulletin 76.

At the beginning of the year 1904 there were subject to inspection 15,375 establishments with 1,684,334 employees, and at the end of the year 14,700 establishments with 1,663,080 employees. The decrease was mainly due to the closing of 745 establishments with 28,744 employees. The closed establishments were mostly of the smaller type, with an average of 38.6 employees, so that the average number of employees per establishment increased from 109.6 in the beginning of the year to 113.1 at its close.

The following table gives the number of the industrial establishments grouped by the number of workingmen employed:

NUMBER AND PER CENT OF ESTABLISHMENTS AND EMPLOYEES, BY SIZE OF ESTABLISHMENTS, AT THE END OF 1904.

Persons employed per establishment.	Establishments.		Employees.		Average number of employees per establishment.
	Number.	Per cent.	Number.	Per cent.	
20 or less	5,349	36.4	63,598	3.8	11.9
21 to 50	4,602	31.3	151,785	9.1	33.0
51 to 100	2,063	14.0	146,643	8.8	71.1
101 to 500	2,042	13.9	465,955	28.0	228.2
501 to 1,000	393	2.7	273,791	16.5	696.7
Over 1,000	251	1.7	561,308	33.8	2,236.3
Total	14,700	100.0	1,663,080	100.0	113.1

It appears that while the majority of the establishments are of the smaller type, 81.7 per cent of them containing 100 working-

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men or less, and 67.7 per cent, 50 workingmen or less, the majority of the factory employees worked in large establishments, 78.3 per cent in those employing over 100 workers and 50.3 per cent in those employing more than 500 workers.

The distribution of the factory employees by sex and by age groups at the beginning and at the end of the year is shown in the following table:

NUMBER AND PER CENT OF EMPLOYEES, BY SEX AND AGE GROUPS, AT BEGINNING AND END OF THE YEAR 1904.

Age group and sex.	Employees at beginning of the year.		Employees at end of the year.		Increase (+) or decrease (−).
	Number.	Per cent.	Number.	Per cent.	
Adults (over 17):					
Males	1,109,024	65.8	1,095,387	65.9	−13,637
Females	388,442	23.1	390,848	23.5	+ 2,406
Total	1,497,466	88.9	1,486,235	89.4	−11,231
Young persons (15 to 17, inclusive):					
Males	97,479	5.8	93,992	5.6	− 3,487
Females	61,298	3.6	57,966	3.5	− 3,332
Total	158,777	9.4	151,958	9.1	− 6,819
Children (12 or under 15):					
Males	16,363	1.0	15,174	.9	− 1,189
Females	11,728	.7	9,713	.6	− 2,015
Total	28,091	1.7	24,887	1.5	− 3,204
All employees:					
Males	1,222,866	72.6	1,204,553	72.4	−18,313
Females	461,468	27.4	458,527	27.6	− 2,941
Total	1,684,334	100.0	1,663,080	100.0	−21,254

In Russian industrial statistics it is customary to differentiate three age groups: Adults over 17 years of age, young persons from 15 to 17 years, and children from 12 to 15 years. The table shows that at the end of the year adult women constituted 23.5 per cent of the total number of employees, young persons of both sexes 9.1 per cent, and children below 15 years of age 1.5 per cent. During the year there was an increase of adult women and a decrease of young persons and children of both sexes.

During the year, 69,697 accidents were reported to the factory inspectors; of these, 67,098, or 96.27 per cent, were slight in their nature, 2,204, or 3.16 per cent, were serious, and 395, or 0.57 per cent, were fatal. The data are particularly interesting, since the year 1904 was the first year of the operation of the Workingmen's Compensation Act of June 2 (15), 1903,[a] which requires complete reports of all industrial accidents. In the preceding year only 35,138 accidents were reported.

The factory inspectors are required to present complete reports on the amount of fines which the Russian factory code permits the employers to impose upon the employees for the following three causes:

[a] See Bulletin 58, pp. 955–959.

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Faulty work, unexcused absences, and breach of the factory rules or disturbance of peace.

The number of fines, the total amount collected in fines, and the average amount per fine, per employee, and per $100 in wages, for the years 1901 to 1904 are shown in the following table:

FINES COLLECTED, 1901 TO 1904.

Year.	Workingmen in establishments where fines are imposed.	Number of fines imposed.		Amount collected in fines.			
		Total.	Per 100 workers.	Total.	Average per fine.	Average per employee in establishments.	Per $100 wages paid.
1901	1,222,382	2,372,283	194	$285,846	$0.120	$0.233	$0.225
1902	1,233,737	2,815,572	228	272,674	.097	.222	.212
1903	1,254,528	2,930,205	234	271,628	.093	.216	.194
1904	1,261,311	2,903,172	230	276,012	.095	.219	.199

The next table shows the number of fines levied, the total amount of fines collected, and the average amount per fine in 1904, classified according to the reasons for which the fines were levied:

NUMBER OF FINES AND AMOUNT COLLECTED, BY CAUSES OF FINES, 1904.

Fines levied on account of—	Number of cases.	Total amount collected in fines.	Average amount of each fine.
Faulty work	2,155,108	$126,797	$0.059
Unexcused absence	416,960	104,531	.251
Breach of rules or disturbance of peace	331,044	44,684	.135
Total	2,903,172	276,012	.095

The largest number of fines in 1904, or 74.2 per cent, were imposed for faulty work, the average amount levied being very small, namely, less than 6 cents. The fines levied for other reasons are less frequent, but greater in amount. According to the Russian factory law, the sums collected in fines can be used only for the relief of the factory employees in cases of permanent or temporary disability resulting from illness or accidents, in cases of confinement, for funeral expenses, for loss of property of employees through fire or other causes, or for cases of need. The number of cases relieved and the total and average amounts granted in 1904 are shown in the following table:

DISPOSITION OF AMOUNTS COLLECTED IN FINES, BY CHARACTER OF RELIEF GRANTED, 1904.

Character of relief granted.	Cases of relief.	Amount of relief.	
		Total.	Per case.
Permanent disability	7,014	$45,106	$6.43
Temporary disability resulting from illness	34,311	91,784	2.68
Confinement	22,301	38,189	1.71
Funeral expenses	18,174	50,580	2.78
Loss of property through fire or other causes	4,241	25,266	5.96
All other objects	6,179	25,052	4.05
Total	92,220	275,977	2.99

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DECISIONS OF COURTS AFFECTING LABOR.

[Except in cases of special interest, the decisions here presented are restricted to those rendered by the Federal courts and the higher courts of the States and Territories. Only material portions of such decisions are reproduced, introductory and explanatory matter being given in the words of the editor. Decisions under statute law are indexed under the proper headings in the cumulative index, page 633 et seq.]

DECISIONS UNDER STATUTE LAW.

EMPLOYERS' LIABILITY—EMPLOYMENT OF CHILDREN IN VIOLATION OF STATUTE—REMEDIES—NEGLIGENCE—*Stehle et al. v. Jaeger Automatic Machine Company, Supreme Court of Pennsylvania, 69 Atlantic Reporter, page 1116.*—George Stehle, an infant, sued by his next friend, George Stehle, the latter suing also in his own right, to recover damages for injuries received by the former while in the employment of the company named. The verdict was for the company in the court of common pleas of Philadelphia County, which judgment was, on appeal, reversed, and a new trial ordered.

The grounds for reversal appear in the opinion, which was delivered by Judge Elkin, and which reads as follows:

The error which ran through the whole trial in the court below was failure to give effect to the act of May 2, 1905 (P. L. 352). The case was tried under the rules of law applicable to cases of negligence where master and servant, both being competent to enter into a contract of employment and each presumably capable of appreciating the dangers thereof, are charged with the duty of exercising due care, the master in providing reasonably safe appliances and machinery, and the servant of using ordinary care to avoid open and obvious dangers. These rules have no application to the facts of the present case. The boy appellant was born June 6, 1892, was first employed by appellee company in April, 1905, and was injured January 27, 1906, being at the time of the injury under 14 years of age. Section 2 of the act of 1905 provides that no child under 14 years of age shall be employed in any establishment to which the provisions of the statute apply, and section 4 requires that "no minor under sixteen years of age shall be permitted to clean or oil machinery while in motion or to operate, or otherwise have the care or custody of, any elevator or lift." It seems to be conceded that the place where the boy worked was an establishment within the meaning of the act, and hence the case must be considered in the light of the statute regulations and requirements. That the legislature, under its police power, has the authority to enact such legislation, is not an open question in this State. In the recent case of Lenahan *v.* Pittston Coal Mining Company (218 Pa. 311, 67 Atl. 642 [Bulletin No. 74, p. 239]), we held

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that it was within the power of the legislature to fix an age limit below which children should not be employed in dangerous kinds of work, and that an employer who violated the law by engaging a child under the statutory age did so at his own risk, and in an action of trespass for personal injuries sustained in such employment the master can not set up as a defense either the assumption of risk or the contributory negligence of the child servant. This seems to be the rule adopted by the courts of other jurisdictions as well as our own. (Sipes *v.* Michigan Starch Company, 137 Mich. 258, 100 N. W. 447.)

The suggestion made by the learned counsel for appellee that a violation of section 2, which prohibits the employment of children under 14 years of age, can only be punished as a misdemeanor as provided in section 23, can not be accepted as a sound rule of law. It is true the statute is penal, and violations of its provisions, upon conviction, are punishable by fine or imprisonment, but these remedies are not exclusive, and do not supersede the right of action for damages in a civil proceeding. (Narramore *v.* Railway Company, 96 Fed. 298, 37 C. C. A. 499 [Bulletin No. 26, p. 202].) Whether the employment of a child in a hazardous occupation, when such employment is prohibited by law, is negligence per se, or only evidence of negligence to be considered in connection with other facts tending to show negligence, the authorities are not entirely agreed, but, for the purpose of the present case, we hold that the employment of the boy under 14 years of age to do any kind of work in the establishment prohibited by section 2, and of his having been employed to clean or oil machinery while in motion, prohibited by section 4, were both questions of fact to be submitted to the jury as evidence of negligence, and, if the injury resulted by reason of the employment prohibited by law, there can and should be a recovery in the case. In the view thus taken of the act of 1905, it is not important to consider the assignments of error relating to the duty of an employer to properly instruct a young and inexperienced employee in the use of dangerous machinery. As to the prohibited employment the master is not relieved by giving instructions.

We do not consider it necessary to consider in detail the numerous assignments of error, because they nearly all relate wholly or in part to the force and effect to be given the act of 1905, and, with this fundamental and controlling question now settled, no difficulty will be experienced in the proper application of the rules of law applicable thereto when the case is again tried.

Judgment reversed, and a venire facias de novo awarded.

EMPLOYERS' LIABILITY—RAILROAD COMPANIES—SAFETY APPLIANCE LAW—DELEGATION OF LEGISLATIVE POWER—CONSTRUCTION OF STATUTE—DUTY AS TO MAINTENANCE OF PRESCRIBED CONDITION—*St. Louis, Iron Mountain and Southern Railway Company v. Taylor, Supreme Court of the United States, 28 Supreme Court Reporter, page 616.*—George W. Taylor, a brakeman in the employ of the company named, was killed while attempting to couple cars, and his administratrix sued to recover damages for his death. The right to recover was based solely

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on the failure of the railroad company to equip the cars in question with drawbars conforming to the safety appliance law of March 2, 1893. Judgment was for the plaintiff in the circuit court of Crawford County, Ark., and, on appeal, in the supreme court of the State. This judgment was reversed in the Supreme Court of the United States because of faulty instructions given by the court below as to the construction of the regulations fixing the height of drawbars, while as to other points the contentions of the railroad company were denied.

The opinion of the court was delivered by Justice Moody, who, after disposing of the question of jurisdiction, took up the provision of the law that authorized the American Railway Association to designate to the Interstate Commerce Commission the standard height of drawbars for freight trains and the maximum variation allowable between the drawbars of empty and loaded cars. The height was fixed by the Association and promulgated by the Commission at 34½ inches from the top of the rails to the center of the drawbars for cars on standard gauge railroads, with a maximum variation of 3 inches between the drawbars of empty and loaded cars. The company attacked this provision of the law as being an unconstitutional delegation of legislative power, as to which contention Justice Moody said:

Nothing need be said upon this question except that it was settled adversely to the contention of the plaintiff in error in Buttfield *v.* Stranahan (192 U. S. 470, 48 L. Ed. 525, 24 Sup. Ct. Rep. 349)—a case which, in principle, is completely in point.[a]

The next point considered turned on the instructions as to the prescribed height of the drawbars. The court below gave the proper statement that the height for an empty car should be 34½ inches, but added that for loaded cars there should be a uniform height of 31½ inches, and that if such was shown not to be the case, the defendant was negligent. One of the cars to be coupled was fully, and the other lightly, loaded. One had an automatic coupler and the other a link and pin coupler, the law at the time not requiring all cars to be provided with the automatic coupler. The question turned on the height of the drawbars, as to which the testimony was conflicting. Speaking of the force of the regulation and its construction by the court below, Mr. Justice Moody said:

We think that it requires that the center of the drawbars of freight cars used on standard-gauge railroads shall be, when the cars are empty, 34½ inches above the level of the tops of the rails; that it permits, when a car is partly or fully loaded, a variation in the height

[a] The case cited was one in which a law authorizing the Treasurer of the United States to appoint a board of tea experts who should classify teas imported into the United States, and to adopt such classification in the collection of duties, etc., was held valid.

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downward, in no case to exceed 3 inches; that it does not require that the variation shall be in proportion to the load, nor that a fully-loaded car shall exhaust the full 3 inches of the maximum permissible variation and bring its drawbars down to the height of 31½ inches above the rails. If a car, when unloaded, has its drawbars 34½ inches above the rails, and, in any stage of loading, does not lower its drawbars more than 3 inches, it complies with the requirements of the law. If, when unloaded, its drawbars are of greater or less height than the standard prescribed by the law, or if, when wholly or partially loaded, its drawbars are lowered more than the maximum variation permitted, the car does not comply with the requirements of the law.

The clear intendment of these instructions was that the law required that the drawbars of a fully-loaded car should be of the height of 31½ inches, and that if either of the cars varied from this requirement the defendant had failed in the performance of its duty. We find nothing in the remainder of the charge which qualifies this instruction, and we think it was erroneous. We should be reluctant to insist upon mere academic accuracy of instructions to a jury. But how vitally this error affected the defendant is demonstrated by the fact that its own evidence showed that the drawbar of the fully-loaded car was 32½ inches in height. Under these instructions the plaintiff was permitted to recover on proof of this fact alone. From such proof a verdict for the plaintiff would logically follow. The error of the charge was emphasized by the refusal to instruct the jury, as requested by the defendant, "that when one car is fully loaded and another car in the same train is only partially loaded, the law allows a variation of full 3 inches between the center of the drawbars of such cars, without regard to the amount of weight in the partially-loaded car." This request, taken in connection with the instruction that the drawbars of unloaded cars should be of the height prescribed by the act, expressed the true rule, and should have been given.

The last question considered related to the duty devolved upon the company by the rule requiring the limits of the variation named to be observed, which was disposed of by holding the duty to be an absolute one, requiring actual performance, and that the employer was not relieved by proof of reasonable care. On this point the court said:

The evidence showed that drawbars which, as originally constructed, are of standard height, are lowered by the natural effect of proper use; that, in addition to the correction of this tendency by general repair, devices called "shims," which are metallic wedges of different thickness, are employed to raise the lowered drawbar to the legal standard; and that, in the caboose of this train, the railroad furnished a sufficient supply of these shims, which it was the duty of the conductor or brakeman to use as occasion demanded. On this state of the evidence the defendant was refused instructions, in substance, that, if the defendant furnished cars which were constructed with drawbars of a standard height, and furnished shims to competent inspectors and trainmen, and used reasonable care to keep the drawbars at a reasonable height, it had complied with its statutory duty, and, if the lowering of the drawbar resulted from the failure to use the shims, that was the negligence of a fellow-servant, for which

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the defendant was not responsible. In deciding the questions thus raised, upon which the courts have differed (St. Louis & S. F. R. Co. v. Delk, 158 Fed. 931), we need not enter into the wilderness of cases upon the common-law duty of the employer to use reasonable care to furnish his employee reasonably safe tools, machinery, and appliances, or consider when and how far that duty may be performed by delegating it to suitable persons for whose default the employer is not responsible. In the case before us the liability of the defendant does not grow out of the common law duty of master to servant. The Congress, not satisfied with the common law duty and its resulting liability, has prescribed and defined the duty by statute. We have nothing to do but to ascertain and declare the meaning of a few simple words in which the duty is described. It is enacted that "no cars, either loaded or unloaded, shall be used in interstate traffic which do not comply with the standard." There is no escape from the meaning of these words. Explanation can not clarify them, and ought not to be employed to confuse them or lessen their significance. The obvious purpose of the legislature was to supplant the qualified duty of the common law with an absolute duty, deemed by it more just. If the railroad does, in point of fact, use cars which do not comply with the standard, it violates the plain prohibitions of the law, and there arises from that violation the liability to make compensation to one who is injured by it. It is urged that this is a harsh construction. To this we reply that, if it be the true construction, its harshness is no concern of the courts. They have no responsibility for the justice or wisdom of legislation, and no duty except to enforce the law as it is written, unless it is clearly beyond the constitutional power of the lawmaking body. It is said that the liability under the statute, as thus construed, imposes so great a hardship upon the railroads that it ought not to be supposed that Congress intended it. Certainly the statute ought not to be given an absurd or utterly unreasonable interpretation, leading to hardship and injustice, if any other interpretation is reasonably possible. But this argument is a dangerous one, and never should be heeded where the hardship would be occasional and exceptional. It would be better, it was once said by Lord Eldon, to look hardship in the face rather than break down the rules of law. But when applied to the case at bar the argument of hardship is plausible only when the attention is directed to the material interest of the employer to the exclusion of the interests of the employee and of the public. Where an injury happens through the absence of a safe drawbar there must be hardship. Such an injury must be an irreparable misfortune to some one. If it must be borne entirely by him who suffers it, that is a hardship to him. If its burden is transferred, as far as it is capable of transfer, to the employer, it is a hardship to him. It is quite conceivable that Congress, contemplating the inevitable hardship of such injuries, and hoping to diminish the economic loss to the community resulting from them, should deem it wise to impose their burdens upon those who could measurably control their causes, instead of upon those who are, in the main, helpless in that regard. Such a policy would be intelligible, and, to say the least, not so unreasonable as to require us to doubt that it was intended, and to seek some unnatural interpretation of common words. We see no error in this part of the case. But, for the reasons before given, the judgment must be reversed.

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EMPLOYERS' LIABILITY — RAILROAD COMPANIES — VALIDITY OF FEDERAL STATUTE IN THE DISTRICT OF COLUMBIA—DAMAGES—*Hyde v. Southern Railway Company, Court of Appeals of the District of Columbia, 36 Washington Law Reporter, page 374.*—This case was before the court of appeals for a decision as to the constitutionality of the Federal liability law of 1906 in its application to employees of common carriers in the District of Columbia. This law was declared unconstitutional by the Supreme Court of the United States, in so far as it related to commerce between the different States. (Howard *v.* Railroad Company, 28 Sup. Ct. 141; see Bulletin No. 74, p. 216.) In the case in hand, however, it was held by the court of appeals that as the Congress of the United States had plenary power to legislate for the District of Columbia and the Territories, any decision as to the validity or nonvalidity of the law as to other localities did not affect the question as it relates to the District, and the law was declared to be in effect in this jurisdiction.

The title of the act is "An Act relating to liability of common carriers in the District of Columbia and Territories and common carriers engaged in commerce between the States and between the States and foreign nations to their employees." Similar language is used in the opening clauses of section 1 of the law. (For the law in full see Bulletin No. 74, pp. 216, 217.)

After quoting the title and first section of the law, and announcing the ruling of the Supreme Court, Chief Justice Shepard, speaking for the court of appeals, said:

> We think it is evident from the language of the title and the first clauses of section 1 of the act that, in its enactment, Congress contemplated the exercise of its plenary power in the District of Columbia and the Territories, and of only its limited power in the States. This general intention, as regards the latter, was thwarted by the use of language, appropriate to the exercise of its plenary power, but not to the exercise of its limited power, making the common carrier, who might also be engaged in interstate commerce, liable to "any of its employees," without discrimination in respect of the character of the business in the conduct of which the injury might occur. We do not think, however, that the purpose to make the new rule of law, defining the relations of master and servant, apply to "every common carrier engaged in trade or commerce in the District of Columbia or in any Territory of the United States," is made abortive by the next clause making it apply also to common carriers engaged in commerce among the several States. This second clause or provision can be eliminated without impairing the particular effect or changing the meaning of the first in any particular.
>
> The provisions of the section being deemed severable, the next question is, whether it is plain that Congress would have enacted the act with the unconstitutional provision eliminated? We see no reason to doubt that it would have done so. One of the special duties of Congress is to legislate generally for the benefit of the inhabitants of the District of Columbia and the Territories. That

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duty in respect of the adequate protection of the employees of common carriers engaged in trade or commerce therein, is in no wise dependent upon its performance in respect of the limited class of employees subject to its jurisdiction in the several States. The latter may be, and are in great measure, protected by State legislation. They have another power to appeal to for their relief, while those in the District of Columbia have not.

The action was brought to recover damages in the amount of $20,000 on account of the death of the intestate, and the question consequently arose whether such an amount could be awarded, since section 1301 of the Code of the District of Columbia, giving a right of action for injuries causing death, limited the amount recoverable under said section to $10,000. The court held that limitation of the code section did not apply to the liability law, saying that—

The objects of the two [statutes] are different. The first remedies a defect in the common law by conferring a right of action in all cases of injuries resulting in death, when, had the injured party survived, he would be entitled to an action, and in no other. The second changes the common law in relation to master and servant by giving the latter a right of action for *all damages* for injuries occasioned by the negligent acts of fellow-servants, and modifies the law as to the contributory negligence of the injured person. It then extends this right of action, in case of death, to the personal representative of the deceased. The damages so recovered are distributed in a different manner from that provided in the earlier law, and are not expressly discharged of the debts or liabilities of the deceased as therein provided. The third section relates to employment contracts, insurance, relief benefits, etc., not mentioned in the Code, and provides a measure of set-off growing out of the same. Moreover, the act operates alike in the several Territories, where it does not appear that there is any statute limiting the amount of recovery.

Notwithstanding the invidious distinction made between the beneficiaries of the separate statutes in respect of the amount of the recovery, we see no reason why they may not stand together and operate according to their terms in cases coming under them respectively. In conferring a right of action where none existed at common law, Congress can couple the grant with any condition it may deem reasonable in the particular case, and is not bound to affix the same condition to all similar grants. Instead of intending to bring the parties to actions created by the act, under the operation of section 1301 of the Code, we think that the intention was to give it operation according to its terms. It makes complete provision for all of its purposes, and leaves nothing to be supplied by the provisions of the Code. Each is to be construed, therefore, as applying to cases arising under it, and to none other.

EMPLOYER'S LIABILITY—RAILROAD COMPANIES—VALIDITY OF FEDERAL STATUTE IN THE TERRITORIES AND THE DISTRICT OF COLUMBIA—*Atchison, Topeka and Santa Fe Railway Company v. Mills, Court of Civil Appeals of Texas, 108 Southwestern Reporter, page 480.*—I. L.

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Mills, an employee of the company named, had sued in the district court of El Paso County and recovered damages for injuries received in the course of his employment in the Territory of New Mexico. The case is of interest only as it presents a ruling as to the validity of the Federal liability law of 1906 in its application to railroads in Territories. Judge Fly, speaking for the court, held that the judgment of the Supreme Court in the Howard case (28 Sup. Ct. 141; see Bulletin No. 74, p. 216) was to the effect that the law was invalid in all respects and as to all places, as appears from the following extracts from his opinion:

While the act was declared unconstitutional and invalid because it was an invasion of the rights of the States, yet it was declared to be invalid, not only as to the States, but also as to the Territories and the District of Columbia. In the opinion of the court, delivered through Mr. Justice White, it was shown that the parts of the act were so blended and interwoven that if one part was unconstitutional the whole act was destroyed. In concluding the opinion of the court Mr. Justice White said: "Concluding as we do that the statute, whilst it embraces subjects, within the authority of Congress, to regulate commerce, also includes subjects not within its constitutional power, and that the two are so interblended that they are incapable of separation, we are of the opinion that the courts below rightly held the statute to be repugnant to the Constitution and nonenforceable." The two subjects referred to as being interblended mean of course the constitutional and unconstitutional parts of the statute, and must refer to that part of the law relating to the territories and the District of Columbia and that part relating to the States.

Courts have no means of knowing that Congress would have passed the law in question, and made it applicable to the District of Columbia and the Territories alone, and to strike out portions of a section of the act to make it conform to that hypothesis would be making, by judicial construction, a law which Congress did not make.

EMPLOYMENT OF CHILDREN—AGE LIMIT—CONSTITUTIONALITY OF STATUTE—VIOLATION—EMPLOYMENT AS CAUSE OF INJURY—*Starnes v. Albion Manufacturing Company, Supreme Court of North Carolina, 61 Southeastern Reporter, page 525.*—Harry Starnes was employed in a cotton mill as a sweeper in the spinning room, and was injured while visiting his father, who worked at a carding machine in the same establishment. He was less than 10 years of age when the accident causing his injury occurred, and his employment was in violation of section 3362 of the Revisal of 1905, which prohibits the employment in factories of children under 12 years of age. Damages for injuries were awarded in the superior court of Mecklenburg County, from which judgment the company appealed, basing its action on three grounds: First, that the law deprives the citizen of his property rights without due process of law, and denies to certain citizens the equal protection of the law; second, that it was error for the court

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to charge that employment in violation of the act was negligence per se; and third, that the court had improperly refused to instruct that unless the child was injured while engaged in the work for which he was hired the employer was not liable.

None of these grounds was allowed by the supreme court, and the judgment of the court below was affirmed. The position of the court on each of the points involved is set forth in the following extracts from its opinion, as delivered by Judge Brown:

Child labor laws have been adopted in nearly all the States of this Union and Canada, and are in force in nearly all the governments of Europe and of the Australian Continent. They are founded upon the principle that the supreme right of the State to the guardianship of children controls the natural rights of the parent, when the welfare of society or of the children themselves conflict with parental rights. In this country their constitutionality, so far as we can ascertain, has never been successfully assailed. The supervision and control of minors is a subject which has always been regarded as within the province of the legislative authority. How far it shall be exercised is a question of expediency, which it is the province of the legislature to determine.

The constitutional guaranty of the liberty of contract does not apply to children of tender years nor prevent legislation for their protection. "So far as such regulations control and limit the powers of minors to contract for labor, there has never been," says Mr. Tiedmann, "and never can be, any question as to their constitutionality. Minors are the wards of the nation, and even the control of them by parents is subject to the unlimited supervisory control of the State." (1 Tiedmann, State & Fed. Con., p. 325.)

The statute we are considering appears to have been framed in good faith, and for the purpose of promoting the general welfare by protecting minors from injury by overwork, from liability to injury by machinery in large manufacturing plants and by facilitating their attendance at schools. It is not an undue restriction of the right of the parent to the labor of the child, assuming that he has such rights, when opposed to the general welfare. It does not close to him all fields of employment for his child, but only those in factories and manufacturing establishments, where the child is more likely to be injured in health or body, or from his childish carelessness, as in this case, than in many other useful employments.

The right to the labor of the child is not a vested right in the parent, nor is it of any more importance than the right to control its education. Both are subject to the paramount power of the State when it deems it necessary to exercise it for the general good. Upon this idea compulsory education laws have been enacted in a large number of States and their constitutionality has been sustained where drawn in question.

As to the second contention, it is decided squarely against the defendant in the recent case of Leathers *v.* Tobacco Co., 144 N. C. 330, 57 S. E. 11 [Bulletin No. 71, p. 373], where it is held not only that a cause of action accrues to the child, if injured, but that it is negligence per se, and not merely evidence of negligence, to violate the statute. The writer can add nothing to the well-considered

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opinion of Mr. Justice Connor in that case, and we find nothing in the well-prepared brief of defendant which induces us to reverse it.

This brings us to consider defendant's third contention, a matter not fully determined in the Leathers Case, and which may be thus stated: That the plaintiff can not recover because the employment of him, although willfully and knowingly done in violation of the statute, was not the proximate cause of his injury, inasmuch as he did not receive the injury while in the discharge of the duties to which he was assigned. It is true that the plaintiff was not engaged in performing his duties in the spinning room, and had gone to the lower floor where the carding machines were, and got his hand caught in one and badly cut. Under such circumstances there are respectable courts which hold that the injury is not the proximate result of a violation of the statute, because not received in performing the work the child was assigned to do, and that therefore the employer is not liable. We are not impressed with the persuasive authority of those precedents, and are not inclined to follow them. To do so, would, in our opinion, unduly restrict the liability of the employer, and would be contrary to the evident intention of the legislature. The act was designed not only to protect the health, but the safety, of children of tender age from the indiscretion and carelessness characteristic of immature years. One who knowingly and willfully violates its provisions is not only guilty of an indictable offense, but he commits a tort upon the rights of the child and should be judged as a culpable wrongdoer, and not as one guilty of mere negligence. The injury done the child is a willful wrong and does not flow from the negligent performance of a lawful act. We think that the breach of the statute constitutes actionable negligence wherever it is shown that the injuries were sustained as a consequence of the wrongful employment of the child in the factory in violation of the law. In this case we think there is a direct causal connection between the unlawful employment of the plaintiff and the injuries sustained by him. By employing this boy of 10 years in violation of the law, the defendant exposed him to perils in its service which, though open to observation, he, by reason of his youth and inexperience, could not fully understand and appreciate.

INJUNCTION—STRIKES—PICKETING—PROTECTION OF EMPLOYEES AS MEMBERS OF LABOR ORGANIZATIONS—CONSTITUTIONALITY OF STATUTE—AGREEMENTS BETWEEN MINE OWNERS—CONSPIRACY—EVIDENCE—*Goldfield Consolidated Mines Company v. Goldfield Miners' Union, No. 220, et al., United States Circuit Court, District of Nevada, 159 Federal Reporter, page 500.*—The Goldfield Consolidated Mines Company is a Wyoming corporation which owns mines in the Goldfield district, besides owning about 97 per cent of the stock in a number of other mine corporations, the mines of which it operates, together with its own, for the benefit of all parties in interest. The Goldfield Miners' Union is an unincorporated association of perhaps 2,000 members, and is a branch of the Western Federation of Miners, likewise a voluntary, unincorporated association. The complainant company charged that the miners' union, though

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claiming to be a labor organization, is a criminal society, organized to agitate certain so-called political questions, tending by its attitude and activities to subvert the general principles of government, and maintaining as one of its cardinal principles that there shall be a continuous state of warfare between employers and employees. It was further alleged that the union encouraged employees to take the property of employers by stealth and force, and, if the demands of employees be not complied with, to destroy the property of the employers. Unreasonable demands enforced by threats, boycotts, picketing, assaults, deportations, etc., were included in the charges, and a preliminary injunction was asked for to prevent interference with the operation of the mines, the intimidation of employees, congregating on and picketing the company's works, and the maintenance of a boycott against the company, its agents, or employees; also prohibiting the holding or attending of any meeting of the Goldfield Miners' Union.

The charges made were denied in detail, and the company itself was charged with violating the provisions of the constitution of Wyoming against consolidations and combinations to prevent competition. It was also alleged that this and other companies had conspired to oppress, boycott, and drive out the members of the Western Federation of Miners, and that the present strike was due to the fact that the members of the union were unwilling to accept depreciated paper in lieu of money for wages.

The opinion of the court was preceded by a lengthy statement of facts setting forth the conditions at the mines for the year preceding the rise of the present cause of action. It was sworn to and not denied that the employees in the Mohawk mines had stolen not less than $1,000,000 worth of ore within a period of six months. In pursuance of an order of the Federal court, watchers were sent to the Mohawk property to prevent the stealing of ore, whereupon the employees, all of whom were members of the defendant union, refused to work below the surface where watchers were stationed. One of these watchers testified that he was waited on by members of the union and remonstrated with on the ground that no good union man would act as watcher. He refused to give up his position and was shortly afterwards expelled from the union. The union subsequently demanded his discharge, claiming that he had violated his obligations. The company refused to discharge him, and a strike was ordered. On settlement, wages were advanced and provisions made for change rooms in which the men were to change their outer garments, a watchman being present.

In March, 1907, a dispute arose between the Federation of Miners and the American Federation of Labor as to jurisdiction over mine carpenters, whereupon the mines were closed until the unions should

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adjust their differences. At about this time a restaurant keeper in Goldfield, who had failed to comply with certain demands of the miners' union, was shot. The homicide was charged against a walking delegate and another member of the union, who were convicted. Attorneys to defend the persons charged were furnished by the union, which also paid them, at first $5 per day, and afterwards $50 per month, from the time of their conviction up to December 6, 1907. An agreement among employers prevented the employment of any member of the Western Federation of Miners during the latter part of March, but on April 1, 1907, a settlement between the miners and operators was reached by which the miners' union was allowed jurisdiction over all employees in and around the mines, mills, and smelters, "including timbermen, timber framers, engineers, blacksmiths, and machinists, and excepting superintendents and managers." Provisions as to the declaration of strikes, boycotts, and lockouts were included, and the term of the agreement was fixed at two years.

At the annual convention of the Federation of Miners, held in June, 1907, the declaration that it was one of the objects of the organization "to use all honorable means to maintain and promote friendly relations between ourselves and our employers, and endeavor by arbitration and conciliation, or other pacific means, to settle any difficulties which may arise between us, and thus to make contention and strikes unnecessary," was stricken out, and nothing of similar or equivalent meaning added. It was also made easier to declare strikes, and contracts or agreements for a specific length of time were prohibited.

In August change rooms were installed, as arranged for, but the water furnished was impure, and the arrangements otherwise so inconvenient and unsatisfactory that a strike was immediately inaugurated, which was settled by arranging for rooms in which the men could change clothing, without the humiliation and inconveniences of the old system; former employees were to be reinstated, and the jurisdiction of the union over employees was explicitly declared.

In November, 1907, the shortness of the supply of gold coin was advanced by the employers as a reason for paying wages one-half in gold and one-half in cashiers' checks, issued by John T. Cook & Co., bankers, Goldfield, Nev. The president of the miners' union declared that a later notice made all wages payable in scrip. After conference, the miners refused to work unless the wages were paid either in cash or in checks satisfactorily guaranteed. To this the mine owners replied that they could not "offer a guarantee in addition to that offered by the local banks for cashiers' checks issued by the local banks," whereupon, on November 27, 1907, the members of the union ceased work. Federal troops were brought to Goldfield

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on the 6th of December, and three days later the Mine Owners' Association, to which the complainant belonged, gave notice of a reduction of wages and of a purpose to employ no members of the Goldfield Miners' Union. The President of the United States appointed a special commission to report on conditions in Goldfield. The report was admitted in evidence, and is in part as follows:

The question as to possible future violence and disorder on the withdrawal of the troops we find to depend largely on the personnel of the Miners' Union and their leaders in particular. A number of these leaders are represented to be men of radical socialistic beliefs and in favor of forcibly asserting what they hold to be their rights. Goldfield, being one of the newest and richest gold-mining camps of the West, attracted many of the most adventurous and radical characters in the Miners' Union, and while many of these have recently left, it is believed that there remain a considerable number of men whose records in other mining camps presage ill for the future of law and order in Goldfield, if Federal troops are withdrawn.

It was strongly urged that the experience of other mining camps with the Western Federation of Miners gave good grounds for the belief that should the mine operators insist on maintaining their position, as above stated, serious disorder would be likely to ensue immediately upon the withdrawal of the troops. All this, however, is purely a matter of future possibilities and not of actual present or past disorders in Goldfield. From the almost unanimous consensus of opinion of all witnesses we are satisfied that in the Miners' Union of Goldfield there are not over a few hundred men of a dangerous type—men who would readily resort to violence to accomplish their ends. The great majority, probably over three-fourths of the union, while loyal to their organization, were conceded to be men of law-abiding tendency who would not willingly initiate or support deliberate violence. But there is likewise little doubt but that this large proportion of orderly men have in the past permitted themselves and their organization to be dominated and controlled in its public actions by vicious leaders, and have lacked either the coherence or the courage to suppress this element and conduct the affairs of their organization in a way to command public respect and confidence. In the early part of the present year the Miners' Union of Goldfield permitted a celebration to be held by the union and a procession under its auspices to march through the streets of that city carrying the red flag of anarchy as a sole emblem, and bearing aloft legends and mottoes of an incendiary character. It is claimed that but a small proportion of the Miners' Union took part in the procession, but it had received the official sanction of the union, and, so far as is publicly known, was never repudiated by that body. Their personal good character can not excuse members of the Goldfield Union for permitting their leaders to outrage decent sentiment, and can not save the organization to which they belong from bearing the reputation it has earned. By permitting their organization to be managed and controlled by men of violent tendencies, the union as a body has thus laid itself open to the reproach of being a vicious organization, and has furnished a foundation for the fear existing in Goldfield that it will support violence and disorder to win its present strike.

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In view of the foregoing facts, we believe there is considerable danger that serious disorders will be attempted if the troops be withdrawn and the mine operators insist on carrying out their publicly announced policy.

The legislature of Nevada, meeting in special session, petitioned for the retention of the Federal troops until a State constabulary should be organized.

A strike committee of five members took charge of the strike "with power and authority" to regulate it. This committee declared it has kept in touch with the progress of the strike, and that instructions were issued to all the members of the union as to their conduct. They were directed to commit no act of trespass or intimidation, and not to carry any deadly weapon. The company adduced evidence, part of it photographic, of the gathering of groups ranging in numbers from 15 persons to 150 and even 200, in such manner as to interfere with the movements of the workmen going to and from work; the use of threatening and insulting language was also alleged, so that some of the employees had already quit work and others would follow unless adequate protection should be given, though there were plenty of men ready and willing to work on complainants' terms, if they were protected.

The injunction was granted by Judge Farrington, who after stating the above facts said in part:

Evidence as to the probable and possible injuries which may result to complainant if members of the Goldfield Miners' Union are permitted to assemble and hold meetings pending this suit is not of such a character as to warrant an interlocutory order forbidding such assemblages. An injunction pendente lite should not usurp the place of a final decree neither should it reach out any further than is absolutely necessary to protect the rights and property of the petitioner from injuries which are not only irreparable, but which must be expected before the suit can be heard on its merits. Only those issues will be determined which are necessary factors in granting or denying a temporary restraining order. It is not necessary that the complainant's rights be clearly established, or that the court find complainant is entitled to prevail on the final hearing. It is sufficient if it appears that there is a real and substantial question between the parties, proper to be investigated in a court of equity, and in order to prevent irremedial injury to the complainant, before his claims can be investigated, it is necessary to prohibit any change in the conditions and relations of the property and of the parties during the litigation.

As to the charge that the company violated the Wyoming law as to combinations, the court said:

Sufficient evidence has not been introduced to support a finding that complainant has violated this statute. It has been held that, where a suit is brought by a corporation to enforce or protect a private right by injunction, a claim that the corporation is illegal or is a monopoly can not be made collaterally as a defense.

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The court then referred to the deportations, in several cases of which the victim had been ordered to leave by an officer of the union, violent beatings being administered in some instances.

The next subject considered was the constitutionality of chapter 111, Acts of 1903 of the Nevada legislature, which forbids employers to require employees to enter into an agreement to join or not to join any labor organization as a condition of employment. This law was held to be violative of the provisions of the fourteenth amendment to the Constitution of the United States, on grounds set forth in the following quotation from Judge Farrington's remarks. After quoting the statute he said:

The obvious purpose of the Nevada statute just quoted is to invade and control the discretion of the employer in selecting his men. If the statute is valid, an employer can not make it a condition on which he will hire men that they shall not belong to any particular labor union; to do so is made a crime, no matter how vicious, turbulent, or lawless the organization may be. This statute lays no similar restriction upon the employees. Their freedom of contract is unrestrained. There is nothing in the statute which forbids union men from discriminating against nonunion men, or nonunion men from discriminating against union men. There is nothing which prevents union men from exacting, as a condition upon which they will work, an agreement that every nonunion man must be discharged, or join the union.

It may be to the advantage of a manufacturer to do business exclusively with some one labor union; its patronage may be immensely valuable to him; but to contract with his men that they must be members of such union, it matters not how wisely that organization may be controlled, or how great the advantage and profit to the master and his servants, if the latter become members of the organization, the employer, under the statute, is guilty of a crime if he insists, as a condition of employment, that his employees shall join the union. On the other hand, another operator may believe that the success of his business depends upon the undivided loyalty and support of his men, and that he can not have such loyalty and support if they belong to, and are bound to submit to the control of, a labor organization; but he also violates this statute by exacting as a condition of employment that his men shall not join a union.

It is a constitutional right of an employer to refuse to have business relations with any person or with any labor organization, and it is immaterial what his reasons are, whether good or bad, well or ill founded, or entirely trivial and whimsical. Under the conditions existing in Goldfield at the time the resolutions were published, it is possible that the only practical method of exercising this right was to require all employees to refrain from being or becoming members of the Western Federation of Miners. Thus we have a right guaranteed by the Constitution, and its exercise blocked, or at least hindered and restricted, by the statute of Nevada. It is too clear to require a citation of authorities that the legislature has no power to restrict the exercise of a constitutional right, unless the interests of the public, as distinguished from the interests of the individual, or of a class of individuals, demand such restraint. The act so forbidden by the legislature must be detrimental to the public welfare, and the health,

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safety, or morals of the community to justify such interference. There can be no pretense here, and none is made, that the execution of such a contract as the one in question has any tendency to injure the health, safety, or morals of the public, or of either employer or employees. It is clear that the Nevada statute deprives the employer of the right to contract as to certain matters which may be vital to him, and that it also, while not preventing, does obstruct the exercise of his right to exclude objectionable persons from his employ. The fact that the statute includes an element which is not found in any other similar statute to which attention has been called, in that it prohibits contracts requiring employees to join a union as a condition of employment, in no wise heals its invalidity; the added element simply makes larger and wider the invasion of the liberty of the employer to fix the terms and conditions upon which he will contract for labor.

Statutes similar to the Nevada act in question have existed in other States, but, in every jurisdiction where their validity has been called in question, they have been held invalid, under the constitutional provision that no one shall be deprived of life, liberty, or property without due process of law. [Cases cited.]

Continuing, the court said:

An unlawful conspiracy is a combination between two or more persons to do an unlawful or criminal act, or to do a lawful act by criminal or unlawful means. (8 Cyc. 620.)

An examination of the resolution in question shows that the association agreed to do five acts, namely: First, to reduce the wages of the men employed by the various members of the association; second, to resume operations, giving preference to old employees; third, to reduce the cost of living in Goldfield District 20 per cent; fourth, to have no further dealings with the Goldfield Miners' Union, or any organization affiliating with the Western Federation of Miners; fifth, to require each person presenting himself to any member of the association for employment to sign, as a condition of such employment, an agreement that he is not, and during the period of his employment will not become, a member of respondent union. The fifth item may be regarded as the means agreed upon to accomplish the first and the fourth. None of the proposed acts are either unlawful or criminal. For these reasons I must hold that complainant in entering into the agreement with the other members of the Goldfield Mine Operators' Association, which is embodied in the resolutions of December 7, 1907, was not guilty of any unlawful conspiracy against the respondents.

Is the evidence sufficient to show the establishment of a picketing system and concerted action by the pickets to coerce and intimidate the employees of the mining company, and thus prevent complainant from operating its mines? The union, by unanimous vote of those present at the meeting of November 26th, declared a strike, and later appointed a strike committee composed of five members. This committee is clothed "with power and authority to oversee and regulate the conduct of said strike." The members of this committee state in their joint affidavit that the committee and the union found the picket system "practically useless," and therefore picketing "has been adopted only to a limited degree;" that is to say, men are not

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assigned to any particular duty or place, no picket lines or squads of pickets have been organized, but union members in numbers ranging from 30 to 75 approach complainant's premises at the hours of the morning and afternoon change of shifts, and they do this at their own volition, without any concert among themselves, and without special, or any, direction from, or understanding with said union, or any of its members, officers, or committees. This picket system as organized, evidently contemplated the active participation of every member of the union, for the affidavit states "that all of the miners belonging to said union were instructed * * * to peaceably address any nonunion man willing to listen, and endeavor in a lawful manner to persuade him to join said union, or refrain from injuring the cause of labor by taking the place of nonunion [sic] miners."

It is as unreasonable to suppose that these men assembled without design or concert among themselves, and without any direction or understanding with the union or its officers or committees, as it is to suppose that the wheels of a watch get into place by accident. Why are all miners belonging to the union instructed to peaceably address any nonunion miner willing to listen, and endeavor in a lawful manner to persuade him to join the union, etc? If it is not intended that the instruction should be obeyed, why is it given? It can not be assumed for an instant that the person who gave such instructions, or that any or all of the miners who received them, had any other thought but that they were to go where the nonunion men were to be found, and address them.

Each party has the right to enter into lawful competition for the support of the nonunion miners, and to endeavor by peaceful argument or persuasion to secure their cooperation, provided the persuasion is of such a character as to leave the person solicited feeling free to do as he pleases, and he is not persuaded to do that which in him would be unlawful. This is so, because workmen, when free from contract obligations, have a legal right, singly, collectively, or as a union, to quit work; that is, to strike, and, having this right, they have the further right to use such lawful means to make the strike effective as are not inconsistent with the rights of others. (Karges Furniture Co. *v.* Amalgamated Woodworkers' Union, 165 Ind. 421, 75 N. E. 877. [Bulletin No. 63, p. 546].) The mining company has the right to employ nonunion men to take the places vacated by those who quit work. The latter have no legal interest or concern in the contract between the company and its new employees. The places which they vacated to strike are no longer theirs, and never again will be theirs unless they are reemployed. It is difficult to see, when a man has voluntarily given up a job, how he can maintain that he has a shadow of claim or right to the vacated place. (Union Pac. R. Co. *v.* Ruef (C. C.), 120 Fed. 102, 128. [Bulletin No. 47, p. 967.])

There is no law, nor is it within the power of this or any other court, to make an order by which the Goldfield Consolidated Mines Company can be compelled against its will to reemploy any miner who quit, or any member of the Western Federation of Miners; neither can any member of that organization be compelled against his will to work for the company. The nonunion men have the same right to work or not work, to agree upon the terms of employment, or to quit work, as union men, no more, no less. They have a perfect right to take the vacated jobs if they can agree with the company upon terms, and the

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respondents have no legal right to dictate what those terms shall be. They have the right to seek employment, to come and go from their work, or to go where they please on the public thoroughfare, without fear or molestation, threats, violence, or insult of any kind. They have a right to come and go without being picketed, or compelled to listen to argument or persuasion, whether it be peaceful or irritating. The pickets have no legal right to insist that any nonunion man shall listen to their solicitations if he is unwilling to do so, it matters not how peaceful and friendly such solicitations may be. (Union Pac. R. Co. *v.* Ruef (C. C.) [supra].) These considerations are true, because, under our system of government, every man has the right to enjoy his liberty and property until it is taken away from him by due process of law. To guard these rights is the true end and aim of our civilization. The existence of such a right in one man necessarily imposes upon every other man the duty to respect it, and upon the government and the courts the duty to guard and protect it. And it necessarily follows that any attempt to intimidate a man in order to compel him to refrain from exercising a legal right is unlawful, and this is true no matter whether the attempt is made by one man or many, or by a corporation or a labor union. Hence, if the pickets, or members of the respondent union, who gather at or near complainant's premises at the time of the morning and afternoon change of shifts, assail nonunion men with threats, ridicule, and insult, or follow them to or from their work with vile language and abusive epithets in order to compel them to quit work, or refrain from offering their labor to the complainant, they are guilty of unlawful conduct.

Whether the union is an original conspirator or whether, after it became aware of the coercive conduct of the pickets, it became a party to the conspiracy by cooperating with and supervising them, is immaterial. In either event, the Miners' Union is a conspirator and is responsible for the acts of its coconspirators.

In order to demonstrate that the union originated or joined this conspiracy, it is not necessary to prove any formal or explicit agreement. The existence of a conspiracy may be shown by circumstantial evidence.

The system of picketing was adopted by the union and its strike committee, and this picketing has been and is under the supervision of the union, through its strike committee. Each member of the committee has taken an active interest in the strike, keeping in close and constant touch with all union men engaged therein, and all, or nearly all, of the pickets are members of the union. Even if it were possible to believe that the union was innocent of any improper design when it adopted the picketing system "to a limited degree," it is idle to contend that it has remained in ignorance of the misconduct of its pickets. The knowledge of the strike committee was the knowledge of the union. Nevertheless, the union, through its strike committee, continued its supervision of the strike, and its members continued to threaten and abuse nonunion men. The coercion was in behalf of the union, for the benefit of the union, and in aid of the strike inaugurated by the union. The union can not now, while it is consciously and uncomplainingly accepting the benefits of this terrorism, relieve itself from responsibility by saying that it has always instructed the miners against lawlessness of every sort.

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The policy and purpose of the Miners' Union and its leaders finds expression in the constitution of the Western Federation of Miners and in the constitution of the Goldfield Miners' Union No. 220.

The court then cited the changes made at the convention of the Federation in 1907, mentioned above, and said:

Whether there shall be constant turmoil and contention must depend upon the personnel of the men who control the action of the union. The industrial struggle between employer and employee, with occasional truces, whose length can not be regulated by agreement with the local union, must go on until, as the preamble to the present constitution of the Western Federation of Miners says, "the producer is recognized as the sole master of his product."

Conciliation, arbitration, and the promotion of friendly relations between employer and employee, and the elimination of strikes and contention, are no longer among the declared objects of the Western Federation of Miners, and its policy seems to be to render strikes easier, settlements more difficult, and settlements by local unions for any definite period impossible. The preamble to the constitution of the Goldfield Miners' Union declares that "the working class and the employing class have nothing in common. There can be no peace so long as hunger and want are found among millions of working people, and the few, who make up the employing class, have all the good things of life. Between these two classes a struggle must go on until all the toilers * * * take and hold that which they produce by their labor." In the early part of the year 1907, a celebration was held by the Goldfield Miners' Union and "under its auspices a procession marched through the streets of that city carrying the red flag of anarchy as a sole emblem, and bearing aloft legends and mottoes of an incendiary character."

About the beginning of the strike or lockout of March, 1907, the following notice was sent to the then manager of the Goldfield Consolidated Mines Company:

"GOLDFIELD, NEVADA, *March 8th, 1907.*

"Mr. JOHN W. FINCH,
"*Nixon Building.*

"DEAR SIR: Goldfield Miners' Union No. 220, W. F. M., have passed a law that all workers employed around the mines must hold a membership card in this union, and if they do not join our members shall refuse to work. This pertains principally to carpenters. We demand that members of our organization only shall follow that work and shall draw the same wages as men now following that line of work. This goes into effect at once."

In the agreement by which that strike was settled, it was conceded that the union should have jurisdiction over all men employed in and around the mines, mills, and smelters, excepting superintendents and managers. A similar concession is to be found in each agreement recited in the record between complainant and the respondent union by which a strike was settled.

These considerations strengthen my conviction that injunctive relief is necessary. One of the most important elements to be considered in determining whether injurious conduct is to be apprehended

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which ought to be restrained by order of this court is the character of the dominant faction of the Goldfield Miners' Union. If that faction is animated by the spirit and the purpose exhibited in the constitutional amendments made by the Western Federation of Miners, it would be remarkable if intimidation and coercion were not resorted to if necessary to secure "jurisdiction over all men regularly employed in and around the mines." When the spirit which prompts conciliation, arbitration, and friendly relations between employer and employee is banished, we are not far from anarchy.

An injunction pendente lite will issue against all of the respondents, except C. E. Mahoney.

INTERFERENCE WITH EMPLOYMENT—INTIMIDATION—*State v. McGee, Supreme Court of Errors of Connecticut, 69 Atlantic Reporter, page 1059.*—Frank J. McGee was convicted in the court of common pleas of New Haven County of intimidating an employee to cause him against his will to refrain from working for the McLagon Foundry Company, and appealed. The conviction was secured under the provisions of section 1296, General Statutes of 1902, and the appeal was based on two principal grounds—one that there were erroneous instructions as to the meaning of the section in question, and the other that the rules of procedure had not been compiled with in the trial court. A new trial was granted on the second ground named, the construction put by the lower court on the section involved being approved. The portion of the opinion of the court which relates to this section is reproduced.

Judge Thayer, speaking for the court, said:

The information is in four counts, each for a distinct offense, charging that the accused "did by threatening, following, mocking, and annoying intimidate" the person named in such count to compel him, "against his will, to refrain from working in the employ of the McLagon Foundry Company." Gen. St. 1902, sec. 1296, provides that "every person who shall threaten or use any means to intimidate any person to compel such person, against his will, to do or abstain from doing any act which such person has a legal right to do, or shall persistently follow such person in a disorderly manner, or injure or threaten to injure his property with intent to intimidate him, shall be punished by fine or imprisonment." The accused did not demur to the information or move in arrest of judgment after verdict, but now claims that the information does not charge an offense under the statute. The gist of the offense created by the statute is the threatening or following, etc., with the purpose or intent to intimidate, and it is not necessary, to constitute the crime, that the person who is threatened shall in fact be intimidated, provided the threats are such as are calculated to intimidate or put in fear an ordinarily firm and prudent man. The court, therefore, correctly refused to charge, as requested, that actual intimidation was necessary, and committed no error in charging, as it did, "that it is not necessary, in order to prove a crime under the statute, that the person to whom the threats

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are made, or whom it is sought to intimidate, should be, in fact, made to fear or be in fact intimidated. It is only necessary to prove that the threats and acts are such as would be calculated to cause the ordinary man to fear or to affect his mind in such a way that he could not voluntarily act or assent."

LABOR ORGANIZATIONS—UNINCORPORATED ASSOCIATIONS AS PARTIES—BOYCOTTS—ATTACHMENT FOR DAMAGES—*Branson v. Industrial Workers of the World et al., Supreme Court of Nevada, 95 Pacific Reporter, page 354.*—L. C. Branson was owner and publisher of two newspapers, the Tonopah Daily Sun and the Goldfield Daily Sun, in the offices of which, as he alleged, he employed only union labor and paid union wages. The defendants, certain unincorporated associations, their officers and a number of members named (taken as representing the associations collectively), were charged by Branson with a conspiracy to destroy the value of his property, because he refused to require his employees to become members of the Industrial Workers of the World. Specific acts of intimidation and violence were adduced as showing the method of the boycott, which extended to newsboys, dealers, advertisers, customers for job work, and the employees of the plaintiff. Judgment in damages in the amount of $25,000 was asked for, and an attachment was obtained on an affidavit that the "defendants had criminally incurred the obligations for which the suit has been commenced."

The case was heard in the circuit court of Nye County, in which certain of the defendants appeared only for the purpose of making a motion that the complaint be stricken from the files, the summons vacated, quashed, and set aside, and that all proceedings so far had be annulled and declared void. This motion was based on the grounds that parties defendant were not properly designated in the complaint, the action not being brought against natural or artificial persons, but against voluntary, unincorporated associations, which are not legal entities and have no existence apart from the persons comprising them. Other motions were made of similar intent, alleging nonconformity to the practice act of the State and the insufficiency of the complaint to state facts which would support a charge of either criminal or civil liability. The circuit court dismissed the action and dissolved the attachment in so far as it related to each and all the unincorporated associations, whereupon Branson appealed, securing a reversal of the judgment of the court below, the case being remanded for further proceedings. The grounds for this reversal appear in the following extracts from the opinion of the court:

It will be observed that in the first motion quoted above it was asked, first, "that the complaint on file herein be stricken from the files"; second, "the summons vacated, quashed, and set aside";

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third, that "all and singular the proceedings so far had * * * be annulled and declared void"; fourth, "that said action be dismissed." There is no specific provision in the statutes for motions of this character, and they should not be granted unless the moving party is clearly entitled to the relief asked for, and the pleadings are not capable of being amended so as to cure the defect complained of. It is manifest that the court could not appropriately grant any of the things demanded in the motion when there were any proper parties defendant. If the court had denied the motion, respondents could not have successfully assigned error, even though it be conceded that it was not proper to make voluntary unincorporated associations of persons, parties to actions merely by the name of the association. In this case, the plaintiff is a natural person, and numerous natural persons are included as defendants. While the trial court could not grant the motion in its entirety, as prayed for, it did grant it in part, by dismissing the action in so far as the voluntary unincorporated associations named and set forth in the complaint were concerned. It seems to be conceded that the effect of this order would be practically to strike from the complaint all defendants, excepting the few designated by name, while the many hundreds who compose the organizations would in no sense be parties to the action. For the purposes of this opinion, we will treat it as having such effect.

While a voluntary unincorporated association can not by its name alone sue or be sued, nevertheless, such an organization has its rights and responsibilities, which rights it may enforce by appropriate procedure; and, by the same procedure, it necessarily follows, it may be held accountable for its responsibilities. These organizations usually comprise a large membership, and are governed in accordance with prescribed rules and regulations by officers elected for the purpose. They frequently not only possess a large amount of property, but exercise vast powers in the communities in which they exist. It is conceded that they may sue or be sued by joining all their members, but this, if requisite, would impose great inconvenience upon the organizations themselves, as well as hardship upon those seeking redress against such organizations, for it would be impossible, in many instances, for nonmembers to obtain the names of more than a small fraction of the membership, without great effort, delay, and probable expense. It is manifest, we think, from the complaint, that the plaintiff proceeded upon the theory that the persons constituting the defendant organizations, being numerous, he could proceed against a few personally, who would represent the whole body of the defendant organizations. Counsel for appellant now contends that the defendant organizations are properly made defendants upon this theory. It has long been recognized in proceedings in equity that an action may be instituted by or against a voluntary unincorporated organization, where the members comprising the same were numerous, by simply joining as defendants a few natural persons, members of the organization, sufficient to represent and protect the interests of the entire membership, and that the few may be made plaintiffs or defendants for all. Were this a proceeding in equity, there would be no question about the right of plaintiff to make certain of the members of the defendant organizations defendants for all their associates who had a common interest. This, however, is an action at law for damages, and the equity rule does not prevail unless made so by

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statute. Section 14 of the Civil Practice Act of this State (Comp. Laws, sec. 3109) provides: "Of the parties to the action, those who are united in interest shall be joined as plaintiffs or defendants; but if the consent of any one, who should have been joined as plaintiff, can not be obtained, he may be made a defendant, the reason thereof being stated in the complaint; and when the question is one of a common or general interest, of many persons, or when the parties are numerous, and it is impracticable to bring them all before the court, one or more may sue or defend for the benefit of all. Tenants in common, joint tenants, or copartners, or any number less than all, may jointly or severally bring or defend or continue the prosecution or defense of any action for the enforcement of the rights of such person or persons." We think it was the intention of the legislature, by this provision of the statute, to make the equity rule applicable to all proceedings in the courts of this State, whether the same be of a legal or equitable nature. Under our code provision, there is but one form of civil action, and legal and equitable distinctions, so far as practice is concerned, are largely, if not entirely, done away with. To hold that the defendant organizations can not be sued without including all members, which are so numerous, scattered and difficult to ascertain might cause such hardship and delay as would amount to a denial of justice. It is hard to conceive of any case to which the statute would be more applicable in its provisions that where the parties are numerous one or more may sue or defend for all. We think, as the court did not and could not grant the relief demanded in the motion, it should have denied it in toto, leaving respondents to whatever remedy they may have been entitled by demurrer.

It appears from the order of the lower court that the attachment was only dissolved as against the voluntary unincorporated associations designated by name in the complaint, but as to the natural persons therein named it was not dissolved. From this it would appear that the trial court did not consider the writ as against the natural persons defendant to have been improvidently issued, and in this view the trial court was clearly correct. What we have said in reference to the voluntary associations as parties defendant applies with equal force to the order dismissing the attachment as to them. If the attachment is good as against any defendants, it is good as to all.

It is contended by counsel for respondents that the affidavit fails to sufficiently charge that the alleged obligation of defendants to pay damages to plaintiff was criminally incurred. The affidavit charges such liability in the language of the statute (Comp. Laws, sec. 3218), and, in addition, makes the complaint with its allegations a part of the affidavit. There can be no question that a criminal conspiracy is alleged in the affidavit under all the authorities. The law, upon one portion of the case as it appears from the affidavit, is concisely stated in 8 Cyc. 639, as follows: "Neither at common law nor under statutes modifying the common-law doctrine is it lawful for workmen to combine to injure another's business by causing his employees to leave his service by intimidation, threats, molestation, or coercion. Such a combination constitutes an indictable conspiracy." Again, the same authority, in continuation of the same general topic, says: "This term (boycott) ordinarily means a confederation, generally secret, of many persons whose intent is to injure another, by preventing any and all persons from doing business with him through fear of incurring

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the displeasure, persecution, and vengeance of the conspirators. The character of agreement included in the term defined is highly unlawful and is an indictable conspiracy." Such a conspiracy is made punishable both by fine and imprisonment under section 4751 of the Compiled Laws of Nevada.

In Ex parte Boyce, 27 Nev. 229, 75 Pac. 1, we said: "Labor properly directed creates wealth, and all honest toil is noble and commendable. The right to acquire and hold property guaranteed by our Constitution is one of the most essential for the existence and happiness of man, and for our purposes here we may consider it to be the cornerstone in the temple of our liberties, and that it implies and includes the right to labor. It may also be granted that labor, the poor man's patrimony, the creator of wealth, and upon which all must depend for sustenance, is the highest species of property, and the right to toil is as sacred and secure as the millions of the wealthy; but individual rights, however great, are subject to certain limitations necessary for the good of others and the community, and inherent in every well-regulated government. * * * Broadly speaking, the right to acquire and hold property, which presupposes the one to labor at all ordinary pursuits, is subordinate to this greater obligation not to injure others, individually or collectively, and to contribute and aid in the support of the government in all its legitimate objects."

It necessarily follows that any attempt by conspiracy to interfere with these fundamental and essential rights or by threats, intimidation, and violence, to prevent the employer from hiring or the employee from laboring, is unlawful under our system of government by which all men are free and equal. No organization or combination of men or individuals can lawfully prevent the exercise of these constitutional rights by all others. If it were legal for the defendant organizations or the officers and members by force, threats, or intimidation to prevent the employees of plaintiff from continuing in their employment, it would be equally so for the unions to which plaintiff's employees belong and for owners' and operators' associations or for other organizations or the officers and members thereof by force, threats, or violence to prevent the members of the defendant organizations from working, even to the extent of starvation. As the law bears equally upon all, it is self-evident that if any labor union or organization could by threats, force, and intimidation lawfully prevent the members of any other union or organization from laboring for employers, or could by force, threats, and intimidation prevent employers from hiring members of other unions or organizations, that every other union or organization would have the same and equal right, resulting eventually in control by the organization exercising the most force and violence, and in the overthrow and subversion of law and order.

Referring to the section of the crimes and punishments act of Nevada relative to conspiracy, counsel for respondents in his brief says: "The conspiracy statute, which was but declaratory of the common law, was amended in 1887, Compiled Laws, sec. 4751, and provides: 'That no part of this act shall be construed in any court of this State to restrict or prohibit the orderly and peaceably assembling or cooperation of persons employed in any profession, trade or handicraft for the purpose of securing an advance in the rate of wages, or compensation, or for the maintenance of the same.' * * * Whether the means by which labor combinations seek to effect its objects and

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purposes is criminal or not depends upon the lawfulness of the mode or action taken in and by which injury is inflicted or threatened—that is, whether it is an actionable wrong or is merely such as the law denominates damnum absque injuria."

According to the complaint and affidavit in this case, the defendants are not within the provisions of the amendment of the statute in any sense whatever. No question of an advance in the rate of wages paid employees, or the maintenance of the same, is here involved. Upon the contrary, the complaint alleges that plaintiff was employing "union" men and paying "union" wages. So far as the complaint now before the court is concerned, it appears that both the plaintiff and his employees were entirely satisfied with existing conditions. The damage alleged in this case to have been sustained was not caused by the employees of plaintiff seeking by peaceable means to maintain or better their condition, but by outsiders, who are alleged to have demanded of plaintiff that he compel his employees to become members of what would appear to be a rival labor organization, and, upon his refusal, entered into the conspiracy charged, to compel him to accede to their demands, or they would ruin his business. Nor is it charged even that defendants were seeking to accomplish their declared purpose by "orderly and peaceably assembling or cooperation;" but, upon the contrary, by means of intimidation, threats of violence and actual violence. Counsel for respondents has not cited us an authority, nor do we think one can be found, holding that what defendants are charged in the complaint with having conspired to accomplish by resorting to intimidation and acts of violence, did not state facts which constitute crime.

It is not necessary that all of the facts alleged to have been committed in pursuance of the conspiracy charged be, in themselves, of a criminal nature; and it is unnecessary to determine whether each and every specific act alleged is unlawful. Some of the acts charged are known by all men to be unlawful, and when they are performed as a part of the means to carry out the purpose which the complaint alleges the defendants combined to accomplish, a conspiracy, criminal in its nature, is sufficiently charged, at least for the purposes of an affidavit for attachment.

In considering the order of the district court, similarly as questions upon demurrer, the charges and allegations of the complaint are assumed to be true for the purposes of the appeal, to the end that plaintiff may have an opportunity to present proof, but whether the defendants did in fact commit the unlawful acts charged by the complaint or not remains to be determined upon the trial, and by a jury, if any of the parties desire one, after defendants have been given an opportunity to make denial or answer setting up any defense they may have, and all parties have presented their evidence and been heard.

For the reasons given, the orders appealed from are reversed, and the cause is remanded for further proceedings.

PICKETING—USE OF STREETS—PERSONAL LIBERTY—MUNICIPAL REGULATION—CONSTITUTIONALITY—*City of St. Louis v. Gloner, Supreme Court of Missouri, 109 Southwestern Reporter, page 30.*—Section 1460 of the municipal code of the city of St. Louis, among

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other provisions, subjects "any person or persons who shall lounge, stand, or loaf around or about or at street corners or other public places, in the day or night time," to a penalty of not less than five nor more than fifty dollars. Jacob Gloner was arrested for an alleged violation of this regulation, and was acquitted by the St. Louis court of criminal correction, whereupon the city appealed. On the appeal the judgment of the court below was affirmed, the ordinance in question being declared unconstitutional.

The evidence showed that Gloner and three others were doing duty as pickets in the conduct of a strike in the city of St. Louis and that he was standing at a corner of the street to intercept workmen in the service of the employer against whom the strike was directed, with the purpose of persuading them not to continue in his service. Gloner refused to "move on" when directed by the police to do so, and was placed under arrest.

Judge Burgess, who delivered the opinion of the court, after stating the facts, said in part:

While the city of St. Louis is given power by the second clause of section 26, art. 3, of its charter (Ann. St. 1906, p. 4809), to regulate the use of its streets, the question here presented is as to whether it had the right, under the provisions of its charter, to pass the ordinance upon which this prosecution is based, and which makes it a misdemeanor, punishable by fine, for any person to lounge, stand, or loaf around or about or at street corners or other public places, in the day or night time. There is no pretense that defendant was at the time of this arrest in any way obstructing the street, or interfering with the rights of any other person, or conducting himself in a disorderly manner; the only charge against him being that he violated said ordinance on the 4th day of August, 1904, and on divers other days and times prior thereto, by unlawfully lounging, standing, and loafing around and about and at certain public street corners and other public places, to wit, Eleventh street and Washington avenue, in the day and night time. While the city has the undoubted right, under its charter, to regulate the use of its streets, it has no right to do so in a way that interferes with the personal liberty of the citizen as guaranteed to him by our constitution and laws. Under this ordinance it is just as much an offense to stand or loaf around upon the corner of one of the streets in the city for five minutes as for two hours or more, time not being an ingredient of the offense; and this, too, regardless of the fact that the offender may not during that time impede the passage of other pedestrians or otherwise interfere with the rights of others. The defendant had the unquestioned right to go where he pleased, and to stop and remain upon the corner of any street that he might desire, so long as he conducted himself in a decent and orderly manner, disturbing no one, nor interfering with any one's right to the use of the street.

It is, however, said for the city that "John Smith, a member of the public, has no right for his own private purposes, whatever they may be, to take his stand for a period of two hours every day upon a particular portion of the public street in a great and populous city."

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That he has such right there can, in our opinion, be no question, providing he conducts himself in a peaceful, orderly manner, disturbs no one, and commits no overt act. In this case, according to the testimony of the officer who made the arrest, he arrested the defendant for the purpose of preventing him from doing "picket duty," which, as explained by the court, consisted in requesting men not to take the places of strikers. In the case of Marx & Haas Jeans Clothing Co. *v.* Watson (168 Mo. 133, 67 S. W. 391 [Bulletin No. 44, p. 157]) Judge Sherwood, speaking for the court, said: "If these defendants are not permitted to tell the story of their wrongs, or, if you please, their supposed wrongs, by word of mouth, or with pen or print, and to endeavor to persuade others to aid them by all peaceable means, in securing redress of such wrongs, what becomes of free speech, and what of personal liberty? The fact that in exercising that freedom they thereby do plaintiff an actionable injury, such fact does not go a hair towards a diminution of their right of free speech, etc., for the exercise of which, if resulting in such injury, the constitution makes them expressly responsible." In Beaton *v.* Tarrant (102 Ill. App. 124) it was held that workmen may use the streets and highways in a manner not inconsistent with public travel, for the purpose of entreaty, inducement, and peaceable persuasion in good faith.

Our conclusion is that the ordinance is unconstitutional and invalid, because it infringes upon the right of personal liberty, and is unreasonable and oppressive.

DECISIONS UNDER COMMON LAW.

LABOR ORGANIZATIONS—BENEFITS—CONSTRUCTION OF BY-LAWS—*Donavan v. Friendly Society of Engravers, Supreme Court of Rhode Island, 69 Atlantic Reporter, page 554.*—John F. Donavan was a member of the above-named (incorporated) society, and had been discharged from employment on account of serving on a committee of the organization to confer with his employer. A by-law of the union provided that where members were discharged for such cause, they would be paid, from the funds of the union, "their full wages as received by them at the date of such discharge, until they shall again obtain steady employment." Subsequent to his discharge, Donavan secured employment, but not as an engraver, and in an action to recover the amount of his wages, judgment was given him for full wages as an engraver, without reference to the amount received by him in his new employment. The society took an appeal to the superior court of Providence County, which directed a new trial to be had unless Donavan should remit all but $100 of the sum awarded. On his appeal to the supreme court, the judgment of the superior court was affirmed, as is shown by the following extract from the opinion of the court:

We think the construction placed upon the words "steady employment" by the superior court was correct. There is no express limitation in the by-law to employment in the trade of an engraver, and it is not necessary to imply such a limitation in order to carry

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out the object of the provision. The design was evidently to give aid to a member while he should be unable to provide for his own support. The necessity for such aid ceases when he accepts steady employment in any occupation. The construction urged by the plaintiff would require the defendant to pay him $20 a week indefinitely, though he might be earning a larger amount if it were not earned as an engraver, which seems to us a greater burden than the defendant can be presumed to have intended to assume.

LABOR ORGANIZATIONS—BOYCOTT—INJUNCTION—CONSPIRACY—FREEDOM OF SPEECH—REMEDIES—*Lindsay & Company v. Montana Federation of Labor et al., Supreme Court of Montana, 96 Pacific Reporter, page 127.*—An injunction had been secured by the company named in the district court of Yellowstone County, which was on hearing modified and continued. From the order denying dissolution the Federation appealed, securing a reversal as appears in the following opinion of the court, which was delivered by Judge Holloway, and which is reproduced practically in full:

As modified, the injunction is as follows: "You are hereby restrained and enjoined, until the further order of this court, or the judge thereof, from in any manner, directly or indirectly, interfering with or obstructing the business of plaintiff in the city of Billings and the town of Bear Creek, or in any manner interfering with any of the patrons of the plaintiff from trading or dealing with the plaintiff, or by threats, abuse, intimidation, or other means calculated or intended to interfere with the said business of the plaintiff; from declaring the plaintiff unfair, or from boycotting the plaintiff or from printing, publishing, circulating, posting, or distributing any circulars, posters, handbills, or other written or printed matter containing opprobrious or injurious epithets against said plaintiff or its business; from interfering with, intimidating, boycotting, molesting, or threatening in any manner the patrons or customers of the plaintiff, or any other person or persons, with the purpose of inducing them not to deal with or do business with the plaintiff, and from giving any directions or orders to committees, associations, unions, or any of their officers or members, or otherwise for the performance of any act in this complaint mentioned, or in any manner obstructing or interfering with the regular operations and the conduct of the business of the plaintiff and from in any way or manner threatening, intimidating or interfering with the plaintiff or any of its officers, agents, or employees in the conduct of the plaintiff's business, or in the discharge of the duties of any such officers, agents, or employees." From the order refusing to dissolve the injunction, this appeal was taken.

For the purpose of this decision the allegations of the complaint need not be referred to at length. We are not called upon to determine the propriety of issuing the injunction in the first instance. The question for our decision is: Should the injunction have been continued in force after the hearing on the motion to dissolve was had? And the answer to this must depend upon the facts disclosed at such hearing. Stripped of all useless verbiage, these facts appeared: That some time prior to October, 1907, Lindsay & Co. had

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been declared unfair by the Miners' Union and Trades Assembly in Helena, and this action had been indorsed by the Montana Federation of Labor, and circulars announcing the fact had been sent to labor organizations throughout the State. On October 25, 1907, the Yellowstone Trades and Labor Assembly, upon information received of the action taken in Helena, passed a resolution which declared Lindsay & Co. unfair, and referred the matter to the grievance committee of that organization to advise the public of the action taken. Acting upon the authority thus given, the grievance committee caused to be published and circulated among the business houses and elsewhere in Billings circulars, of which the following is a copy:

"UNFAIR.

"All laboring men and those in sympathy with organized labor are requested not to patronize Lindsay & Co. who are engaged in the wholesale fruit business, also distributers for cigars and vegetables of all kinds in Billings and vicinity, as they are unfair. We urge the retail merchants, laboring men, and all who are in sympathy with organized labor to place themselves in position to patronize friendly wholesalers. We further desire to call attention to the fact that Lindsay & Co. are operating peddling wagons throughout this city, and we ask the people to guard against patronizing these wagons. We ask this for your own protection and the protection of organized labor.

"[Signed] YELLOWSTONE TRADES AND LABOR ASSEMBLY."

That immediately after the adoption of the resolution and the publication of this circular a large number of retail dealers in Billings, who had theretofore purchased goods from the plaintiff company, ceased to do business with the concern, with the result that the business of the company at Billings was practically paralyzed, and great financial loss resulted. As stated by the witness Vaughan for plaintiff: "We have lost patronage from these merchants on account of being unfair. A circular printed and sent around. There is no other cause." Another witness for the plaintiff testified that at a meeting of the Clerks' Union in Billings early in November, 1907, the defendant Fairgrieve made the statement that "they had Lindsay & Co. on the unfair list, and they had him where they wanted him, and he believed it was a good thing to leave him there." Fairgrieve testified that he did not remember making any such statement. However, this is immaterial to a consideration of the matter before us. From these facts we are to determine the question: Should the injunction have been dissolved? It is to be observed that only two acts of any consequence are shown to have been committed by the defendants: (1) They declared Lindsay & Co. unfair, or, in the language of respondent, boycotted the company; and (2) they published the circular set forth above, that is, they caused it to be printed and circulated. The injunction, as modified, is very sweeping in its terms, and in that form could not be justified by any possible state of facts; but assuming that it was continued for the purpose of preventing the continuance in force of the boycott, and for the purpose of preventing a repetition of the publication of the circular or a similar one, although there is not any evidence of any threat or purpose on the part of the defendants or any of them to repeat that act,

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we may consider the question presented to us by reference to these two principal acts mentioned.

1. Does the continuance in force of the resolution of October 25, 1907, amount to such an invasion of plaintiff's rights as will warrant the interposition of a court of equity by injunction?

It is insisted by the respondent company that the defendants organized a boycott of plaintiff's business by agreeing among themselves and with other members of organized labor to withhold their patronage from the plaintiff company, and that they undertook by coercion to compel the retail dealers of Billings and others to likewise withdraw their patronage; that the resolution of October 25, 1907, was intended and understood by the defendants to express the object of their preconcerted design; and that the publication of the circular was for the purpose of intimidating the retail dealers and others. We think it may fairly be said to have been shown by the evidence that upon the adoption of the resolution of October 25th, and upon the intelligence of that action becoming general among the union men there, it was understood among those men that they would not patronize Lindsay & Co. while the interdict was in force, and would not patronize any one who did patronize that company, and that they expected that all retailers and others in sympathy with their organizations would cease trading with the plaintiff company. Whether the acts done by the defendants constituted a boycott, of course, depends entirely upon the definition of that term which may be adopted. We are of the opinion that the evidence shows that these defendants inaugurated a boycott on Lindsay & Co., and that it was still in effect at the date of the hearing. We adopt the language of the Supreme Court of New York in Mills *v.* United States Printing Co. (Sup.) 91 N. Y. Supp. 185, in which the court, speaking through Justice Jenks, said: "I think that the verb 'to boycott' does not necessarily signify that the doers employ violence, intimidation, or other unlawful coercive means; but that it may be correctly used in the sense of the act of a combination, in refusing to have business dealings with another until he removes or ameliorates conditions which are deemed inimical to the welfare of the members of the combination, or some of them, or grants concessions which are deemed to make for that purpose." In Ulery *v.* Chicago Live Stock Exchange, 54 Ill. App. 233, it is said: "A person, with or without reason, may refuse to trade with another; so may 10 or 50 persons refuse. An individual may advise his neighbor or friend not to trade with another neighbor. He may even command when the command amounts only to earnest advice."

But what is there unlawful in the act of the union workingmen of Billings in withdrawing their patronage from the plaintiff? Certainly it can not be said that Lindsay & Co. had a property right in the trade of any particular person. In this country patronage depends upon good will, and we do not think that it will be contended by any one that it was wrongful or unlawful, or violated any right of the plaintiff company, for any particular individual in Billings to withdraw his patronage from Lindsay & Co., or from any other concern which might be doing business with that company, and that, too, without regard to his reason for doing so. But there can be found running through our legal literature many remarkable statements that an act perfectly lawful when done by one person becomes by some sort of legerdemain criminal when done by two or

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more persons acting in concert, and this upon the theory that the concerted action amounts to a conspiracy. But with this doctrine we do not agree. If an individual is clothed with a right when acting alone, he does not lose such right merely by acting with others, each of whom is clothed with the same right. If the act done is lawful, the combination of several persons to commit it does not render it unlawful. In other words, the mere combination of action is not an element which gives character to the act. It is the illegality of the purpose to be accomplished, or the illegal means used in furtherance of the purpose, which makes the act illegal. (18 Ency. Law (2d Ed.) 82; Bohn Mfg. Co. *v.* Hollis, 54 Minn. 223, 55 N. W. 119.) "A conspiracy is a combination of two or more persons by some concerted action to accomplish a criminal or unlawful purpose or to accomplish a purpose, not in itself criminal or unlawful, by criminal or unlawful means." (Anderson's Law Dictionary, 234.) Chief Justice Parker, in speaking for the Court of Appeals in National Protective Ass'n *v.* Cumming, 170 N. Y. 315, 63 N. E. 369 [Bulletin No. 42, p. 1118], said: "Whatever one man may do alone, he may do in combination with others, provided they have no unlawful object in view. Mere numbers do not ordinarily affect the quality of the act."

If, then, these defendants and their associates did not violate any legal right of the plaintiff in withdrawing their patronage from the company, or in agreeing to withdraw their patronage from any one who might patronize Lindsay & Co., they can not be enjoined from continuing the boycott in force, so long as the means employed to make the boycott effective are not illegal. The evidence shows that the only means used in this instance was the publication of the circular in question, and this brings us to a consideration of the second proposition involved.

2. (*a*) May a court of equity enjoin the publication by an individual of a circular of this character; (*b*) if not, may it enjoin such publication when made by a number of individuals acting collectively?

(*a*) Article 3 of our constitution is entitled: "A declaration of rights of the people of the State of Montana," and section 10 of that article, so far as applicable here, reads as follows: "No law shall be passed impairing the freedom of speech; every person shall be free to speak, write or publish whatever he will on any subject, being responsible for all abuse of that liberty." The language here employed seems too clear to admit of doubt or argument. The one fundamental idea conveyed by this section is penalty for a violation of the privilege, not prevention of its abuse. The language of the section is not susceptible of any other meaning than this: That the individual citizen of Montana can not be prevented from speaking, writing, or publishing whatever he will on any subject. If, however, what he writes or publishes constitutes a criminal libel, he may be held responsible for the abuse of the liberty in a criminal prosecution (Pen. Code, c. 8), or, if what he speaks, writes, or publishes wrongfully infringes the rights of others, he may be held responsible for the abuse in a civil action for damages. If this is not the meaning of the section, it is because the framers employed language which is impotent as a vehicle for conveying their idea.

But it is suggested by counsel for respondent company that these defendants are insolvent, and that a judgment for damages would

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be worthless. Even granting this to be so, still the constitution does not discriminate among men according to the amount of their possessions. The guaranty of this section extends as fully to the poorest as to the wealthiest citizen of the State; and, though an abuse of the liberty so guaranteed may result in loss for which there can not be any adequate compensation, the framers of our constitution in preparing it, and the people in adopting it, doubtless concluded that it was better that such results be reached in isolated cases, than that the liberty of speech be subject to the supervision of a censor. To declare that a court may say that an individual shall not publish a particular item is to say that the court may determine in advance just what the citizen may or may not speak or write upon a given subject—is, in fact, to say that such court is a censor of speech as well as of the press. Under similar constitutional provisions, the supreme courts of California and Missouri have reached the same conclusion. (Daily *v.* Superior Court, 112 Cal. 94, 44 Pac. 458; Marx & Haas Jeans Clothing Co. *v.* Watson, 168 Mo. 133, 67 S. W. 391.)

(*b*) What we have said above, in the first paragraph of this opinion, is likewise applicable here. If any one of these individuals could publish this circular, they may with equal security all join in its publication. We think the evidence produced at the hearing was insufficient to justify the continuance in force of the injunction, and it should have been dissolved.

The order of the court is reversed, and the cause is remanded, with direction to vacate the order heretofore made and enter an order dissolving the injunction.

LABOR ORGANIZATIONS—EXPULSION OF MEMBERS—BENEFICIAL ASSOCIATIONS—FORFEITURE OF POLICY—ACTS OF THIRD PARTIES—MEASURE OF DAMAGES—*St. Louis Southwestern Railway Company of Texas v. Thompson, Court of Civil Appeals of Texas, 108 Southwestern Reporter, page 453.*—This case was before the court of appeals for the second time, having first been heard under the title, Thompson *v.* Grand International Brotherhood of Locomotive Engineers et al. (91 S. W. 834). The appeal at that time was by W. Z. Thompson from a decision of the district court of Smith County, in which he had sued the Brotherhood, the railway company above named, and certain individuals, to recover damages for alleged wrongful and malicious expulsion from the Brotherhood and for the malicious publication in the Brotherhood Magazine of the statement that he had been expelled for unbecoming conduct and the violation of his obligation.

On the first hearing the district court directed a verdict in favor of the defendants, which judgment was, on appeal, reversed and the case was remanded for a new trial under a ruling that it should have gone to the jury. On this trial judgment was given against the railroad company for $500 actual and $2,000 exemplary damages, and the case as to the other defendants was dismissed. The railroad company thereupon appealed, securing first a reversal of the judg-

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ment awarding damages, but on rehearing the judgment as above set forth was affirmed.

The facts and much of the opinion of the court in the second trial are presented only by reference to the opinion in the first appeal. It appears that Thompson was a locomotive engineer and had been at one time employed by the St. Louis Southwestern Railway Company, and that he was, prior to his expulsion therefrom, a member in good standing of the Brotherhood of Locomotive Engineers. This organization extends over the United States, Canada, and Mexico, and includes in its membership nearly all the locomotive engineers in its territory. It consists of a "grand brotherhood", incorporated and having its headquarters at Cleveland, Ohio, with a "grand chief engineer," P. M. Arthur; and of subordinate divisions, each presided over by a "chief engineer" and other officials. The order publishes a monthly magazine of large circulation among its members and others as an organ of communication between its members and also with the public. By the rules of the local branches, all expulsions of members are published in this journal. In the case of such expulsions, an appeal lies to the grand chief engineer.

Upon joining the organization the members obligate themselves, among other things, not to "sign or circulate, or cause to be signed or circulated, any paper, circular, petition, or document of any sort whatsoever, calculated to injure or destroy the organization." The order collects dues and provides sick and disability benefits and issues life insurance policies, one of which Thompson held. The amount of Thompson's policy was $1,500 and he had paid premiums thereon in an amount, approximately, of $350. Members also hold traveling cards which enable them to travel on all trains without the payment of fare.

Thompson was expelled from his local organization and appealed to the grand chief engineer, who upheld the action of the local body. The charges were made by the first assistant engineer of the local body (No. 201), and were two in number, as follows: "For writing to Mrs. A. H. Penniman and urging her to sue the Cotton Belt Railway for the death of her husband. For going on the witness stand in the Bolton case and testifying against the Cotton Belt Railway to the injury of other brothers and causing the brotherhood at large to lose prestige with the Cotton Belt Railway." The letter mentioned was one that had been written by one J. W. Nichols and was signed by him and by Thompson at the former's request. It was addressed to the widow of a locomotive engineer who had lost his life in a wreck, and urged her not to compromise with the company nor settle with it "for a cent less than $10,000," and concluded, "We feel certain that you can get $20,000 from the company, and will only have to pay one-third of it to a lawyer if you will only stand firm and not be persuaded to give away your rights. You can easily

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find out who we are from your friends here in Tyler, and if you should want to talk to us we will gladly call to see you. We are not working for the Cotton Belt Company, and we are free to advise you honestly without fear or hope of reward." Thompson sought to justify himself in signing the letter by citing a by-law of the brotherhood that provided that "The widow of any deceased brother shall be assisted in every way and manner which may be deemed proper, etc."

On the first appeal the court had said:

It may be remarked in limine, that the courts are not disposed to interfere with the internal management and conduct of such organizations as the Brotherhood of Locomotive Engineers is shown to be. Its members become such voluntarily and in doing so agree to submit to and abide by the laws of the organization, as embodied in its constitution and by-laws and other rules and regulations lawfully adopted thereunder, and to submit their rights to the judgment of the tribunals provided by the laws of the organization for the government of its members, under the forms of procedure provided. This is true without regard to the fact that the organization is incorporated. "By uniting with the society the member assents to and accepts the constitution and impliedly binds himself to abide by the decision of such boards as that instrument may provide for the determination of disputes arising within the organization. The decisions of those tribunals when organized under the constitution and lawfully exercising their powers, though they involve the expulsion of a member, are no more subject to collateral attack for mere error, than are the judgments of a court of law." (Screwmen's, etc., Association *v.* Benson, 75 Tex. 555, 13 S. W. 380; 1 Bacon on Ben. Soc., Sec. 102.) This doctrine, however, has this important qualification which is as clearly settled as the general rule, that the society "must confine itself to the powers vested in it, and in good faith pursue the matters prescribed by its laws, such laws not being in violation of the laws of the land, or any inalienable right of the member." (Otto *v.* Journeymen Tailors' Union, 75 Cal. 308, 17 Pac. 217, 7 Am. St. Rep. 156.)

We are not prepared to say that if the members of division 201 in good faith and in the exercise of their honest judgment determined that the signing of this letter, under the circumstances, was unbecoming conduct or a violation by appellant of his obligation, and sufficient ground for expulsion, they would not have been authorized under the constitution and by-laws of the order to so determine. A good deal of latitude must necessarily, and should be, allowed the members in determining questions such as these, and courts will not interfere, if they act in good faith. Whether this action of the local subdivision, in so far as it was based upon the signing of the Penniman letter alone, was authorized, would depend upon whether its members in good faith, and in the exercise of their honest judgment, expelled appellant for this cause. The evidence introduced by appellant sufficiently raised this issue which should have been submitted to the jury.

The second specification under the charge presented against appellant is based upon his action in "going upon the witness stand in the Bolton case and testifying against the Cotton Belt Ry. to the

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injury of other brothers, and causing the Brotherhood at large to lose prestige with the Cotton Belt Ry." It is not to be supposed that if the action of the members of the subdivision in expelling appellant was based upon this charge alone it would be defended in any court, or that it would be contended that under any permissible latitude of discretion or authority, the members of the local subdivision would have been authorized, under any plea of good faith, to have placed such a construction upon the terms of the by-laws, as that under which they claim to have acted, so far as this specification of the charge is concerned. It can not be assumed that appellant in joining the brotherhood and in assenting to all of the provisions of its constitution and laws could ever have supposed or anticipated that a construction so at war with the laws of the land, with his duties as a citizen and a member of society, and involving such an abnegation of his inalienable rights as such, would be adopted, as would punish him for doing that which the law and his duty as a citizen required him to do.

The provision of the constitution, authorizing subdivisions of the Brotherhood to expel members for unbecoming conduct is not unreasonable, on the contrary is just and proper, but if there be written into it the construction which declared the act with which appellant was charged in the second specification of the charge against him, to be unbecoming conduct and ground for expulsion, there would be no hesitation in declaring it unreasonable, unlawful, and void.

It is charged by appellant that in expelling him the members of the division acted maliciously and with intent to injure him, and as showing that they acted maliciously and not in good faith, evidence was introduced tending to show that the charge of signing the Penniman letter was a subterfuge and a pretext, that there was no disposition on the part of the members to expel him on this ground, and that he would not have been expelled at all for this reason. This evidence shows that it was proposed to appellant that if he would promise to keep off of the witness stand and quit testifying against the railway company he would not be expelled, and that it was only upon his refusal to so promise, but agreeing that he would, when called upon, tell the truth, which was characterized by one of the members as "not sufficient," that it was determined to expel him. The uncontradicted testimony supports this contention of appellant; notably the letter of J. J. Bartholomew to the officers and members of division 201, dated November 15, 1902, and his letter to Arthur, grand chief engineer; the testimony of McCool, one of the defendants "that he named the proposition to Thompson that if he had promised then and there that he would not go on the witness stand against the company as an expert witness, that he would not have voted to expel him;" the fact that Nichols, who wrote the Penniman letter and got Thompson to sign it, and who was also under charges for doing so, made the required promise and got off with suspension for three months. If it be true that the expulsion of appellant was solely upon the ground set out in the second specification, and that the prosecution for writing the Penniman letter was merely for the purpose of affording a color or pretext for the expulsion, then it could not be said that the members acted in good faith and from proper motives in expelling him.

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Appellant was not required to exhaust the remedies within the order to correct the wrongful action of the local division, before bringing this suit for damages. It was held by the Supreme Court in Screwmen's Ben. Association *v.* Benson, 76 Tex. 552, 13 S. W. 379, that such a course was necessary before resorting to the extraordinary remedy of mandamus to compel reinstatement, and for obvious reasons pertaining to the nature of that extraordinary remedy. In that case, however, which was a suit for damages as well as mandamus, the court especially limited its decision to that part of the petition which sought a mandamus. Upon a second appeal to this court in which the opinion of the court was by Justice Williams, it was expressly held that the remedy for damages could be prosecuted without having resorted to the appeal within the order. (Benson *v.* Screwmen's Ben. Ass'n (Tex. Civ. App.) 21 S. W. 562.) We are content to follow this opinion, which appears to us to be sound. Reinstatement in the order as a result either of an appeal to the next meeting of the Grand International District Convention, or failing that, by a writ of mandamus, would not have afforded appellant full redress for the injury to his property rights and other damages suffered on account of his expulsion from the brotherhood.

In the second opinion, which, like the first, was delivered by Judge Reese, much consideration was given to assignments of error which were overruled, and which need not be noted here. The question of evidence as to damages and their admeasurement was discussed as follows:

It was not error to instruct the jury to take into consideration, in estimating appellee's damages, the value of his insurance policy in the order. This policy was in favor of his wife for $1,500, on which appellee had paid assessments for eight or nine years at the rate of $1.50 to $3.50 per month. It was a necessary consequence of his expulsion, if not reinstated in 12 months, that this policy should be forfeited without return of any part of the assessments paid. This was sufficient to show that the policy was of some pecuniary value to him. That the amount of this value could not be accurately estimated would not prevent its proper consideration by the jury in finding the amount of his damages. The same may be said with regard to other benefits of which appellee was deprived by reason of his expulsion, including the traveling card which enabled him to travel on all railroad trains in the United States, Mexico, and Canada. If this card was a mere gratuity, as claimed by appellant, and there was no obligation upon it or any other railway company to recognize it, or to allow appellee to ride upon it without paying his fare, nevertheless such cards were in general use, and did enable the holders thereof to ride upon trains without payment of fare, and for this reason it can not be said that the card was not of some pecuniary value, or that this, as an element of damages, was purely speculative. We can not agree with appellant's contention that a member of a society or beneficial order, such as was the Brotherhood of Locomotive Engineers, can not recover such actual damages as he may suffer on account of his wrongful and unlawful expulsion therefrom, but must be limited to nominal damages. Such damages may be of very uncertain value, and the amount thereof very difficult of ascertainment, but they are not more so than damages for mental or physical suffering,

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loss of reputation, etc., which are freely allowed in many cases. The assignments of error from 7 to 10 can not be sustained.

By the twenty-second assignment appellant complains of the error of the court in overruling its motion for a new trial on the ground that the award of exemplary damages—$2,000 is grossly in excess of the amount ($500) awarded as actual damages. There is no fixed rule as to the proportion between actual and exemplary damages in cases where such damages are recoverable. (Tynberg *v.* Cohen, 76 Tex. 416, 13 S. W. 315.) We can not say that the proportion in the present case is so excessive as to lead to the conclusion that the jury were actuated by prejudice, passion, or other improper motive, in all of the circumstances of the case.

The court then took up the question of the ground of the liability of the railroad company in the case, the other defendants in the original action having been held by the trial court not to be liable in damages, on grounds that are not set forth.

The twenty-third assignment complains of the error of the court in overruling appellant's motion to arrest the judgment for the reasons that the jury having by their verdict acquitted the other defendants with whom, as alleged in the petition, appellant had conspired to have appellee expelled, the judgment against appellant should not be allowed to stand. This is not a case in which the conspiracy is the gravamen of the wrong, or where the wrong is one that can only be brought about by a conspiracy. The wrong is the expulsion of appellee from the lodge by the members thereof, and appellant is sought to be charged therewith, on the ground that this action was brought about by its advice and counsel. The defendants are simply charged as joint wrongdoers. The conspiracy charged is, in substance, that the wrong was done by the other defendants at the instigation of appellant. If the evidence and pleadings authorized the verdict against appellant, it is not a wrong of which it can complain that the jury, for reasons entirely incomprehensible to us, did not mete out to the other defendants the same measure of liability they imposed upon appellant, the evidence showing guilt upon their part. If appellee had sued appellant alone, it could not have complained. It could not claim contribution from the joint wrongdoers. The assignment is overruled.

The twentieth assignment of error presents the most serious question in the case, and we are of the opinion, after a careful review of the evidence, that it must be sustained. The assignment presents the question that the verdict and judgment against appellant railway company are against the great weight and preponderance of the evidence, and that they are without any evidence to support them. Substantially all of the evidence to show any connection of appellant, acting through its general superintendent, Green, with the expulsion of appellee from the order, is to be found in the testimony of Bartholomew and Green and is to be gathered from an interview between Green and Bartholomew and two other engineers in the employ of appellant. Bartholomew testified upon the former trial, and his testimony then, standing alone, can hardly be said to differ substantially from his testimony in the present record. It appears clear from the entire testimony in this record that Green's purpose in

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sending for Bartholomew and his associates upon the occasion in question was to explain to them that one Tipton, a discharged engineer, had been discharged for not paying his debts when he was able to do so, and to exhibit to them certain letters in support of this fact. Tipton had complained to the brotherhood, of which he was a member, that he had been discharged for testifying against appellant. Green's purpose was to satisfy these parties that this was not true. After the Tipton matter had been disposed of, Green called the attention of Bartholomew and his two associates to the fact, as claimed by him, that appellee [Thompson], Nichols, and Kelton, ex-engineers, were soliciting lawsuits, against the railroad company for certain law firms using their traveling cards to get transportation as much as possible to solicit these lawsuits, and then going on the witness stand as experts against the company and against them. Green wanted to know if the brotherhood was going to tolerate or uphold this kind of business, and said substantially that if the brotherhood upheld the kind of conduct referred to he would feel justified, when a verdict of a jury in such a case showed negligence in an engineer, in discharging the engineer. Bartholomew testified that he understood Green to mean by "'upholding that kind of work' if we upheld our members in chasing over the country on traveling cards belonging to the brotherhood soliciting lawsuits for any firm and then going on the witness stand as experts against the company and against us." Green's version of what took place at this interview, leaving out immaterial matters, is as follows: "I told the men that a number of men—I presumed some of them belonged to their brotherhood, I didn't know whether they did or not—were posing as expert witnesses in suits pending against the company. Were not only doing that, but were soliciting suits; that we had just recently settled the claim of Mrs. Penniman for the death of her husband, and at the time the settlement was made she told our claim agent Mr. Yowell that Mr. Kelton had been there to see her, and had urged her strongly not to settle with the company; that there was a firm of lawyers in town that would take her case on one-third, and that she was foolish to settle with the company in any way, shape, form, or manner, and that she had received a letter from Mr. Thompson and Mr. Nichols, which letter was signed as members of the division at Tyler, urging her not to settle the case with the company, but to put her case in the hands of a lawyer and sue. I told them those were acts we objected to. Settlement was made with Mrs. Penniman by the company some time ago—August, 1902. I can't give the exact day. Mr. Yowell had told me what I told these people. Told them that was the character of testimony we objected to, and it would have to stop. I also told them that in some States the laws were such that if an engineer was guilty of carelessness, negligence in stopping his train, as shown by the evidence given by some of these self-imposed experts, that the laws were such as would put them in the penitentiary, and in my opinion they were not only doing the company harm, but were doing the men a harm. I cited the Bolton case. I said to Mr. Bartholomew: 'You were an engineer in the Bolton case. With my experience for some 37 years of railroad work—some 15 years of that devoted to train work strictly—I have looked over the ground carefully, and have looked over your testimony very carefully. I have considered the weight of the train, speed, grade, and I fully believe

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from my experience that you did everything that you possibly could to stop that train before striking the girl.' I said to him: 'The jury believed otherwise; they took the evidence of the expert witnesses, and they believed otherwise.' 'Now,' I said, 'Mr. Bartholomew, I have made up my mind to do this; to take the same view exactly that the jury takes in these cases. I can't do otherwise. I might be doing you an injustice, but suppose the jury says you are negligent in the Bolton case; that you could have stopped your train; and that you didn't stop it; that you didn't use everything at your command to stop that train. Suppose you run along two months or three months then later and have a similar accident, and it is shown you were careless in the Bolton case, and we have retained you in the service of the company, the jury would certainly censure the company for retaining careless men in its employ, and would unquestionably render a double verdict. I have made up my mind that I am going to take the same view of the case that the jury takes, and if they say that you are careless and negligent, and didn't stop your train—didn't use every means to stop your train—I am going to take the same view, and dismiss you from the service.' Then the discussion came up in regard to the action of Mr. Thompson and others in connection with the Penniman case, and it was discussed and taken for granted that they were not only engaged in soliciting the Penniman case, but in soliciting other cases, and that they were being employed by certain attorneys in town. Mr. Bartholomew then spoke up and said: 'Mr. Green, we have already had these matters up. I have a letter at home from our grand chief engineer, where we have put the matter up as to whether or not we could expel them for those acts.' He says: 'I have a letter from him and it is my intention—' I believe he said, 'to lay the matter before our division.' I said: 'What action you take in your division is nothing to us. We have nothing to do with your division in any way, shape, form, or manner. We are dealing with you as engineers, and whatever action you take by your division is something we have nothing to do, and no advice to give.' So far as I can recall that was about the substance of the interview at that time."

He further testified that he expected the members to use or exert their influence to stop that kind of work, but did not suggest in any way, directly or indirectly, that any action be taken by them as a brotherhood; that he gave them distinctly to understand that he had no advice to give, nor any suggestions to make, in reference to anything being done by the brotherhood as a body.

Now, looking to what was in fact done by the local lodge, which affords basis for this suit, in the trial and expulsion of appellee upon the grounds and for the offenses charged, and particularly in his expulsion upon the second specification, viz., testifying against the Cotton Belt Railway Company in the Bolton Case, it can not be said that the evidence supports a finding that appellant, acting through Green, its general superintendent, either instigated or suggested such action, or conspired with the members of the lodge therein.

On the view of the evidence here indicated, the judgment of the court below was reversed and judgment was rendered for the appellant company. A rehearing was granted, however, on which the court of appeals reversed itself and affirmed the decision of the

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lower court on grounds that appear in the following extracts from the opinion delivered at that time:

Upon the hearing of this appeal the judgment of the trial court was reversed, and judgment rendered for appellant upon its twentieth assignment of error presenting the point that there was no evidence upon which appellant could be held liable to appellee for damages in the matter complained of in the petition. Reference to our former opinion will fully disclose the grounds upon which this conclusion is based. Both parties seem rather to have concluded that in our former opinion this question was settled against appellant's contention, which conclusion we can not say was not justified on their part. For this reason probably the question was not presented as fully in the briefs as it otherwise would have been. Upon further consideration of the question, in the light of the able and exhaustive brief and argument of counsel for appellee [Thompson] upon motion for rehearing, we have concluded that we were in error upon this point, and as we have concluded that none of the other assignments of error present grounds for reversal, our conclusion that we were in error in sustaining the twentieth assignment requires an affirmance of the judgment.

The evidence of the acts of Green, appellant's general manager, upon which its liability is predicated, is in the main set out in the original opinion. Other collateral matters, however, which we now think were fairly entitled to be considered by the jury, in determining appellant's liability, are not referred to. This evidence tends to show that Green's purpose was to prevent appellee Thompson from testifying generally, as an expert, in suits against appellant company, and there is more than a suggestion that this referred partly, at least, to his testimony in the Bolton Case, which had been once tried, with an adverse verdict against appellant, based to some extent, at least, on the appellee's testimony as an expert on the operation of air brakes. This case was still pending. Coupled with this was the complaint of Green that appellee and others had been running around stirring up litigation against appellant, and soliciting lawsuits for certain attorneys. Probably no legitimate complaint could be made of Green's desire and efforts to put a stop to this practice. But any attempt, by any means, to prevent his testifying in cases against appellant as an expert or otherwise, when called upon, or to interfere with the due administration of the law, in this particular, was unlawful. It not only affected appellee but the general public as well. Our views on this question are sufficiently indicated in our opinion upon the former appeal of this case. (91 S. W. 834 [supra, pp. 610–612].) There is no doubt that there was a distinct threat on the part of Green that if engineers, members of the Brotherhood of Locomotive Engineers, and not in the employ of the company, testified as expert witnesses in suits against the company, and upon such testimony there was a verdict against the company predicated upon the negligence of an engineer, he would "accept the verdict of the jury" and discharge the engineer, unless the brotherhood did something to put a stop to this practice. This was a suggestion to the brotherhood as an organization, and to the members of the lodge of which appellee was a member, to do something to put a stop to appellee's so testifying in any way against the company. It is not necessary that Green should have had in view the particular action

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that was taken by the brotherhood. It is sufficient to show that his purpose was an unlawful purpose, and that he intended, and to some extent, by the influence of his threat to discharge, compelled some action on the part of the brotherhood either to enforce obedience to his expressed desire or to punish him for disobedience. It may be that Green, as general manager, would have been justified in discharging an engineer, or any other employee, in case it had been shown by the verdict of a jury that an accident, resulting in loss to the company, had been caused by his negligence, but it is impossible to see why this result should have been threatened only in cases where the verdict of the jury was predicated upon the testimony of an ex-engineer, member of the Brotherhood of Locomotive Engineers, and then only in case the brotherhood took no step to put a stop to such witnesses testifying as experts, unless for the purpose of controlling the action of such persons through the lodge of which they were members.

RAILWAY RELIEF ASSOCIATION—STATUS—LIABILITY OF RAILROAD COMPANY—*Phillips v. St. Louis and San Francisco Railroad Company, Supreme Court of Missouri, 111 Southwestern Reporter, page 109.*—Ida Phillips sued the railroad company named to recover damages for the death of her husband, who had been an employee in its service, and the St. Louis circuit court had given a peremptory instruction to find in favor of the defendant company. From this judgment an appeal was taken, the ruling of the court below being reversed and the case remanded for a new trial.

The principal point of interest is the relationship of the employing company and the "Employees' Hospital Association of the Frisco Line," a corporation separately incorporated by the leading officials of the railroad company. The company's contention was that it was in no way responsible for the negligence, if any, of the hospital association, that the latter is a distinct corporate entity, and is responsible for its own acts. Phillips had been an inmate of a hospital under the care of the hospital association, and the charge was made that he was negligently allowed to leave the same when in a known unfit condition, and by reason of such negligence had met his death.

The court held to the identity of interest of the two corporations, ruling that the railroad company was answerable for any acts of negligence of the association. The grounds for this position are found in part in the charter of the association, which in section 1 recites the name adopted and in section 2 announces the purpose of the association to be to support a "benevolent and charitable undertaking" in providing medical and surgical treatment, including hospital service, for the employees of the St. Louis and San Francisco Railroad Company and its associated companies. Section 4 declares that "The association shall not engage in business for pecuniary profit in any form, and shall not have any capital stock; the funds

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necessary for carrying out its purpose shall be raised in such manner as may be provided by the by-laws." The rules formulated set forth that it is contemplated that for the consideration of the contribution paid monthly by the members of the association, a home and medical attendance for sick and injured members will be provided.

The rules sent out to employees upon the organization of the association are in part as follows:

The Employees' Hospital Association of the Frisco Line, having agreed to furnish necessary medical, surgical and hospital treatment to such employees of the St. Louis & San Francisco Railroad System as may become sick or injured while in the service of said companies, and to erect and maintain a hospital for the use of such sick and injured, and the employees of said system having agreed to contribute to a fund to be paid to said hospital association, to be used and expended by the association for such purpose, the following rules for the guidance of employees are hereby promulgated:

(3) Heads of departments and foremen will be furnished with blank certificates, and will issue them properly signed to such employees as are entitled to the benefit of the hospital association, and every employee receiving such certificate will be entitled to receive from the head of his department free transportation over the company's lines to the hospital, which, in case of emergency, when delay may be dangerous, will be provided by telegraph on application to the proper officer. These certificates are good only in the month for which they are issued.

(4) The company hereby donates to the hospital association the use of its telegraph lines to facilitate the care and treatment of sick or injured employees, and therefore all persons in the service of said companies, and all others are hereby notified that no bills for medical or surgical services, nursing, drugs or funeral expenses, will be paid by these companies unless first authorized by the general claim agent.

(5) In every case of personal injury to an employee, the conductor or foreman of the department in which the party is employed must report particulars as soon as possible by wire to division superintendent or head of department in which the accident occurs. State whether a surgeon has been summoned to attend, and if so, give such surgeon's name, and state further whether the injured man will be transported to general hospital. It will be the duty of the above officers to see that such telegraphic advice is promptly given them, and they will at once telegraph full particulars to superintendent, chief surgeon, and general claim agent.

(13) The persons who have been, or may hereafter be, appointed by the hospital association chief surgeon, assistants, hospital dispensary, division and local surgeons and physicians, are hereby appointed chief surgeon, assistants, division and local surgeons and physicians, as the case may be, of the St. Louis & San Francisco Railroad Company, and its leased and operated lines (while they hold such positions in connection with said hospital association), for the care and treatment under the rules above established of all passengers, citizens and nonemployees, who may be injured on the line of this company, and as such will be respected and assisted in the discharge of their professional duties when called upon.

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Following are extracts from a circular signed by the vice-president and general manager of the company:

Patients received at the hospital will be provided free of charge, with everything necessary for their careful and comfortable treatment, including the services of the hospital surgeons or physicians, so long as they require surgical or medical attention and obey the rules established for their protection, but not longer than one year, without special authority from the trustees. For the purpose of carrying into effect the above system, and to enable all the employees to become members of and entitled to all the benefits and privileges of said association, notice is hereby given to all concerned that, commencing with the wages for month of July, 1899, which are payable in August, an assessment will be made on the pay rolls (including salary vouchers), as follows: [Then follow the rates of assessment.] This company will pay to said hospital fund as an assessment the sum of five hundred dollars annually, in monthly installments. All employees of the St. Louis & San Francisco Railroad System are entitled to hospital benefits under such rules and regulations as may be established for the government of the hospital. Rules and regulations governing the disposition and treatment of ill and injured employees will be issued and all employees should become familiar with those regulations, as they are established for the benefit of all. The surgeons and physicians of the St. Louis & San Francisco Railroad Company, will, on and after August 1, 1899, be under the control and direction of the chief surgeon of the hospital association, and all ill or injured employees will, on and after that date, be under the care and treatment of the hospital association.

B. F. YOAKUM,
Vice-President and General Manager.

Having set forth the facts, Judge Graves, who announced the opinion of the court, said:

From this circular it appears that no option is left an employee; but, on the other hand, defendant appropriates a certain amount of his wages and furnishes him medical treatment. From oral evidence it appears that the officers of this hospital association were officers of the defendant; the treasurer was the same; the employees made no formal application for admission as members, but only signed pay rolls with the deductions made as provided for in the foregoing documents.

We have set out this evidence, perhaps, in more detail than should have been done, but the relationship between these two corporations is an important one, and not confined to this case alone. To our mind it is immaterial as to the true character of the hospital association as indicated by its charter provisions. It has, however, but few, if any, of the earmarks of a voluntary benevolent association. Nor are there any earmarks of a public charity. What is received is paid for by the recipients. Under the weight of authority it can not be held to be a charitable institution. [Cases cited.] So that the rule that exempts such institutions from liability does not apply. Nor are institutions of the character of the one disclosed by this record exempted from liability by the mere employment of competent servants. They must go further and competently treat the patients received. In such case they occupy the position of ordinary

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physicians and surgeons and are bound by the same rules, which are too familiar for repetition here. If they undertake to furnish the treatment, not as a charity, they stand in no different light from the ordinary physician. But this question is really beside the issues in this case. No one can read this record without concluding that, if the thin corporate shell of the hospital association is broken, the yolk therein contained is the defendant. By rule 1, defendant exempts certain mail carriers from assessment, and excludes them from benefits. By rule 3, the heads of the departments and the foremen of the defendant are furnished with blank certificates, which they fill and issue to employees entitled to receive benefits, and such heads of departments and foremen, the alter ego, of defendant, thus decide who shall be treated by the hospital association. By rule 5, the defendant's chief surgeon and general claim agent must be notified, and by rule 6, if the employee injured can be moved to the hospital, the chief surgeon and general claim agent must be notified. Why notify the general claim agent of defendant, if the two corporations were separate and distinct entities, in fact? That the hospital association is operated for the benefit of defendant as much or more than for the benefit of the employees is too apparent from this record. But, beyond all is rule 13, which makes the chief surgeon, and other surgeons of the hospital association, the chief surgeon and the local and division surgeons of the defendant. Eliminating all other matters, this rule 13 makes the chief surgeon and other surgeons the agent and employees of the defendant. But further showing that the hospital association, or its several surgeons, is but the alter ego of defendant, we have circular No. 35, supra, by which defendant says to all employees that they will be assessed to pay for this medical attention. No option is given an employee. By force of this rule, defendant says to an employee: "We will take so much of your monthly earnings, and in the event you are hurt or become sick, and in the judgment of the heads of the departments and the foremen in our employ you are entitled to medical treatment, we will furnish it to you through the hospital association." So that it becomes unnecessary in this case to break the extremely thin and attenuated corporate shell of the hospital association, and expose to open view the yolk therein contained. The hospital association, whether it in fact be a separate corporate entity, or in fact the defendant itself, masquerading under an assumed name, is at least the agent and employee of the defendant to perform these particular services. The defendant pays its said agent $500 annually, and in addition it requires of its employees that they pay to it the remainder, and by it such sum is paid to the agent for these services. To say the least, this hospital association, together with all its surgeons and physicians, are but agents of defendant, and made so by express words in rule 13, supra. The negligence of these agents is the negligence of the defendant. As said in the case of Orcutt *v.* Century Bldg. Co., 201 Mo. 424, 99 S. W. 1062, 8 L. R. A. (N. S.) 929, the defendant holds the purse strings of the hospital association. Not a dollar does it get save through defendant. Defendant pays for itself $500, and the remainder is paid by the tribute which defendant levies upon its employees, which is collected and paid through defendant. The hospital system is a worthy one, and a well-taken, advance step; but, under the record in this case, such hospital association is but the agent of the defendant.

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LAWS OF VARIOUS STATES RELATING TO LABOR, ENACTED SINCE JANUARY 1, 1904.

[The Tenth Special Report of this Bureau contains all laws of the various States and Territories and of the United States relating to labor, in force January 1, 1904. Later enactments are reproduced in successive issues of the Bulletin beginning with Bulletin No. 57, the issue of March, 1905. A cumulative index of these later enactments is to be found on page 633 et seq. of this issue.]

OREGON.

ACTS OF 1907.

CHAPTER 53.—*Accidents on railroads.*

SECTION 56. Every railroad shall, whenever an accident attended with loss of human life or limb, or with serious injury to person or property, occurs within this State upon its line of road or on its depot grounds or yards, give immediate notice thereof to the commission, stating the particulars thereof: *Provided*, That neither said report nor any part thereof shall be used as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report. In the event of any such accident the commission, if it deem the public interest requires it, shall cause an investigation to be made forthwith, which investigation shall be held in the locality of the accident, unless, for greater convenience of those concerned, it shall order such investigation to be held at some other place, and said investigation may be adjourned from place to place as may be found necessary and convenient. The commission shall seasonably notify an officer or station agent of the company of the time and place of the investigation. The cost of such investigation shall be certified by the commission and the same shall be audited and paid by the State in the same manner as other expenses are audited and paid.

Filed in the office of the secretary of state February 18, 1907.

CHAPTER 143.—*Hours of labor of employees on railroads.*

SECTION 1. Any person who owns or operates a steam railroad which is located wholly or partly in this State shall not permit or require any conductor, engineer, fireman, brakeman, or flagman, who, upon arrival at a terminal station, has been ten (10) or more consecutive hours on duty, to go again on duty until he has had at least ten (10) hours off duty. No conductor, engineer, fireman, brakeman, switchman, flagman, or telegraph operator shall be required or permitted to remain on duty more than fourteen (14) consecutive hours, except when longer consecutive service becomes necessary because of fires or wrecks or washouts or other unavoidable delays or unforeseen emergencies.

SEC. 2. The manager or superintendent of any person owning or operating a steam railroad located wholly or partly in this State, or any other official charged with the management or control or operation of such railroad, or any part thereof, shall be responsible, as well as the owner thereof, for a violation of the provisions of this act; and any one or more of said persons violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $100 nor more than $500, or by imprisonment in the county jail not less than six months nor more than one year, or by both such fine and imprisonment.

Filed in the office of the secretary of state, February 25, 1907.

CHAPTER 157.—*Examination and licensing of barbers.*

SECTION 1. Section 4 of an act to regulate the pursuit, business, art and avocation of a barber, * * * is hereby amended to read as follows:

Section 4. No person shall be permitted to pursue the business, art or avocation of a barber within the State of Oregon, nor be entitled to registration as a registered barber in this State, unless he shall have followed the occupation of a barber for at least three years, either as an apprentice or barber, or as apprentice and barber; any person

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desiring to obtain a certificate under this act shall make application in writing to the State Board of Barber Examiners in the manner prescribed by said board, such application must be verified by the oath of the applicant; the applicant shall with his application pay to the treasurer of the State Board of Barber Examiners a fee of $5, and shall present himself at the next regular meeting of the board for the examination of applicants, whereupon said board shall proceed to examine such person, and if satisfied that such applicant is qualified to practice the business, art and avocation of a barber, his name shall be entered by the board upon the register kept by them: *Provided*, That whenever it shall appear that the applicant has acquired his knowledge of the barber business in a barber school or college, the board shall be the judges as to whether or not such barber school or college is properly appointed and conducted so as to give sufficient training in such business; and the State Board of Barber Examiners and each member thereof is hereby authorized at all reasonable times during business hours to visit any and all barber schools or colleges in this State for the purpose of seeing whether or not students in such barber schools or colleges are receiving proper instruction and training, and to see that no provision of the law relating to the pursuit, business, art and avocation of a barber is being violated in any such school or college, and to see that such schools and colleges are conducted and managed in a skillful, cleanly and sanitary way. It shall be the duty of every proprietor, instructor or person in charge of every barber school or college in this State to keep posted in at least two conspicuous places in such barber school or college, so that the same may be seen and read by all students therein, copies of the by-laws of the said State Board of Barber Examiners and the rules and regulations governing barber shops, schools and colleges in the State of Oregon, adopted by the said board and in force in this State: *Provided, also*, That it shall be in the discretion of the said board to allow the time spent by any person in any barber school or college in this State to apply on the time required to be spent in following the occupation of a barber to entitle a person to registration under the act; and the said board is hereby empowered to adopt and prescribe reasonable rules and regulations governing the equipment and conducting of any barber school or college within the State of Oregon. A neglect or failure of the manager or person in charge of any barber school or college in this State to post and keep posted in at least two conspicuous places in such barber school or college, the by-laws of the State Board of Barber Examiners and the rules and regulations governing barber shops, schools and colleges in the State of Oregon, adopted by said board and in force in this State, shall be sufficient reason for the revocation by said board of the certificate of registration of any registered barber in charge of or giving instruction in any such barber school or college in the manner provided in section 8 of said act, and any violation of any of the rules and regulations governing barber shops and colleges in the State of Oregon adopted by the State Board of Barber Examiners and in force in this State by the person in charge of, or any instructor in any barber school or college in this State, shall be sufficient reason for the revocation by said board of the certificate of registration as a registered barber of the person guilty of such violation in the manner provided in section 8.

All persons making application under the provisions of this act shall be allowed to practice until the next regular meeting of the board.

Filed in the office of the secretary of state, February 25, 1907.

CHAPTER 158.—*Factories and workshops—Inspection, etc.*

[See Bulletin No. 73, pp. 942-945.]

CHAPTER 161.—*Hours of labor of employees in mines.*

SECTION 1. No person who operates any underground mine yielding gold or silver or copper or lead or other metal shall permit or require any person to work in such underground mine for more than eight hours in any twenty-four hours and the hours of employment in such employment or work day shall be consecutive, excluding, however, any intermission of time for lunch or meals; but, in the case of emergency, where life or property is in imminent danger, persons may work in such underground mines for a longer time during the continuance of the exigency or emergency. This act shall not apply to mines in their first stages of development, such as tunnel work to a length of 200 feet, or shaft work to a depth of 150 feet, or to any surface excavation.

SEC. 2. Any person, persons, body corporate, general manager or employer who shall violate or cause to be violated any of the provisions of section 1 of this act, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than fifty ($50) dollars, nor more than three hundred ($300) dollars, or by imprisonment of not less than 30 days, nor more than three months. And the court shall have discretion to impose both fine and imprisonment as herein provided.

Filed in the office of the secretary of state, February 25, 1907.

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CHAPTER 163.—*Payment of wages in scrip—Attorneys' fees in suits for wages.*

SECTION 1. No person or corporation engaged in any business or enterprise of any kind in this State shall issue, in payment of or as an evidence of indebtedness for wages due an employee, any order, check, memorandum or other acknowledgment of indebtedness, unless the same is negotiable, and is payable without discount in cash on demand at some bank or other established place of business in the county where the same is issued; and such person or corporation shall, upon presentation and demand, pay any such order, check, memorandum, or other acknowledgment of indebtedness, in lawful money of the United States: *Provided, however*, That nothing herein contained shall in any way limit or interfere with the right of any such employee to accept from any such person or corporation, as an evidence or acknowledgment of indebtedness for wages due him, a negotiable instrument, payable at some future date with interest.

SEC. 2. Whenever an employer discharges an employee, all wages earned and unpaid at the time of such discharge, shall become due and payable immediately. When any such employee, not having a contract for a definite period, shall see fit to quit or resign his employment, all wages earned and unpaid at the time of such quitting or resignation shall become due and payable immediately: *Provided*, Such employee shall have given not less than three days' notice of his intention to quit his employment; but when any number of employees enter upon a strike, the wages due such striking employees at the time of entering upon such strike, shall not become due and payable until the next regular pay day after commencement of such strike: *Provided*, That the time between the commencement of the strike and such next regular pay day does not exceed a period of thirty days.

SEC. 3. In any action for the collection of any such order, check, memorandum, or other acknowledgment of indebtedness, or in any action by an employee against an employer for the collection of wages, if it is shown that such order, check, memorandum, or other acknowledgment of indebtedness, or said wages were not paid for a period of forty-eight hours after proper demand for the payment thereof, the court may, in its discretion, upon entering judgment for the plaintiff, include in such judgment, in addition to the costs and disbursements otherwise prescribed by statute, a reasonable sum for attorney's fees for prosecuting said action: *Provided*, Such employe shall have given not less than three days' notice of his intention to quit his employment.

Filed in the office of the secretary of state, February 25, 1907.

CHAPTER 190.—*Hours of labor of employees on public works.*

SECTION 1. Eight hours shall constitute a day's work for all laborers and mechanics now employed or who may hereafter be employed by the State of Oregon, or by any county in said State, unless otherwise ordered as to any county by vote of the legal electors of said county, except in cases of extraordinary emergency when it may be necessary to work more than eight hours per calendar day for the protection of property or human life: *Provided*, That in all such cases such laborers and mechanics so employed and working to exceed eight hours per calendar day shall, for such overtime, be paid at the rate of one and one-half times the rate of pay allowed for the same amount of time during the eight hours' service: *And provided, further*, That the provisions of this act shall not apply to any employees of any State institution except the penitentiary.

SEC. 2. Any person violating any of the provisions of this act shall for each offense be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment not more than six months, or by both fine and imprisonment, in the discretion of the court.

Filed in the office of the secretary of state, February 25, 1907.

CHAPTER 191.—*Railroads—Overhead wires.*

SECTION 1. It shall hereafter be unlawful for any corporation or person to string any wire, electric or other, over the tracks of any railroad company, except at such places and in such manner as shall be authorized and approved by the county court of the county wherein such crossing with such wire is proposed, said county court sitting for the transacting of county business, and any corporation or person desiring to so string any wire shall give such railroad company notice in writing of the place and manner in which it desires to string the same, and the place where and the time when it will apply to said county court sitting for the transaction of county business for approval and authority as above required, which notice shall be served at least ten days before the time of hearing of such application.

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SEC. 2. The county courts of the several counties in the State of Oregon shall, as soon as possible after the passage of this act, either by personal examination or otherwise, obtain information as to all places where the tracks of railroad are crossed by wires strung over said tracks, and whenever in its judgment such wires should be raised to a greater height, or other thing done with reference thereto to guard against accidents, shall order such change or changes to be made, and shall apportion any expense incident thereto between the companies or persons affected as may be deemed just and reasonable: *Provided*, That in no case shall the height of any wire strung or to be strung across or over such or any railroad tracks be less than twenty-five feet, excepting trolley wires, which shall not be less than twenty-three feet from the top of the rail of said railroad tracks.

SEC. 3. It shall be the duty of every corporation and person to whom an order made by the county court of the respective counties in said State under this act shall be directed, to comply with such order in accordance with its terms, and for any neglect to so comply therewith any such corporation or person shall be liable to a penalty of $100, and to a like penalty for every ten days during which said neglect shall continue. Any such penalty may be recovered by an appropriate action instituted by the county where such violation or disobedience has been committed, and said penalty shall be recovered by said county, and it shall be the duty of the prosecuting attorney of the district in which said county is located to bring and prosecute any such action in the name of the county at the request of the said county court sitting for the transaction of county business.

Filed in the office of the secretary of state, February 25, 1907.

CHAPTER 192.—*Coercion of employees—Choice of boarding houses, stores, etc.*

SECTION 1. It shall be unlawful for any person or corporation to compel by threats or intimidation, or threats of discharge, or to use any means to compel an employee against his will to board at any particular hotel, boarding house or other place where lodgings or board may be provided, or to require an employee to purchase goods and supplies at any particular store.

SEC. 2. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine in a sum of not less than twenty-five ($25) dollars nor more than one hundred ($100) dollars, or by imprisonment in the county jail not less than ten nor more than thirty days, or by both such fine and imprisonment.

Filed in the office of the secretary of state, February 25, 1907.

CHAPTER 200.—*Employment of women—Hours of labor—Seats.*

[See Bulletin No. 73, pp. 779, 780.]

PENNSYLVANIA.

ACTS OF 1907.

ACT NO. 67.—*Protection of employees on buildings.*

SECTION 1. Whenever complaint is made to the mayor, director of public safety, superintendent of police, or other persons in charge of the police force, in any city of the first, second or third class in this State, that the scaffolding, or slings, hangers, blocks, pulleys, stays, braces, ladders, irons, or ropes of any sling or stationary scaffolding, used in the construction, alteration, repairing, painting, cleaning, or pointing of buildings, within the limits of any city aforesaid, are unsafe, or liable to prove dangerous to life or limb of any person, such mayor, director of public safety, superintendent of police, or other person in charge of the police force, shall immediately cause an inspection to be made of such scaffolding, or the slings, hangers, blocks, pulleys, stays, braces, ladders, irons, ropes or other parts connected therewith. If, after examination, such scaffolding or any of such parts is found to be dangerous to life or limb, the mayor, director of public safety, superintendent of police, or other persons in charge of the police force, shall prohibit the use thereof, and require the same to be altered and reconstructed so as to avoid such danger. The person directed to make such inspection shall attach such certificate to the scaffolding, or the slings, hangers, irons, ropes, or other parts thereof, examined by him, stating that he has made such examination, and that he has found it safe or unsafe, as the case may be. If he declare it unsafe, he shall at once, in writing, notify the person responsible for its erection of the fact, and warn them against the use thereof. Such notice shall be served personally

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upon the person responsible for the erecting, or by conspicuously affixing it to the scaffolding or part thereof to be declared unsafe. After such notice has been so served or affixed, the person responsible therefor shall immediately remove such scaffolding or part thereof, and alter or strengthen it in such manner as to render it safe, in the discretion of the person who has examined it, or of his superiors. Any person whose duty it is to examine or test any scaffolding or part thereof, as required by this act, shall have free access at all reasonable hours to any building or premises containing them, or where they may be used.

SEC. 2. If any scaffolding or staging, swung or suspended from an overhead support or supports, shall be more than ten feet from the ground or floor, the same shall be deemed unsuitable and improper, and as not giving proper protection to the life and limb of any person employed or engaged thereon, unless such scaffolding or staging shall, when the same is in use, have a safety rail, rising at least thirty-four inches above the floor or main portion of such scaffolding or staging, and extending along the outside thereof the entire length of the outside thereof, properly attached thereto, and unless such scaffolding or staging shall be provided with braces so as to sustain the weight of a man's body leaning against it, and prevent the scaffolding or staging from swaying from the building or structure.

SEC. 3. All swinging and stationary scaffolding shall be so constructed as to bear four times the maximum weight to be dependent therefrom or placed thereon when in use, and not more than three men shall be allowed on any swinging scaffolding at one time.

SEC. 4. Any person who violates, or omits to comply with, any of the foregoing provisions of this act, or who suffers or permits the use of any article or scaffolding declared by a proper officer to be defective, or who destroys or defaces any notice posted in accordance with the provisions of this act, or who hinders or obstructs any officer who may be detailed to enforce its provisions, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine not exceeding five hundred dollars or by imprisonment not exceeding six months, or both, at the discretion of the court.

Approved the 15th day of April, A D. 1907.

ACT No. 90.—*Employment offices.*

SECTION 1. The director of the department of public safety, in cities of the first and second class in this Commonwealth, shall, upon petition, license and regulate employment agencies therein, as hereinafter provided.

SEC. 2. The term "person," used in this act, means and includes any individual, company, association, partnership, corporation or their agents. The term "licensed person" means and includes any person licensed under the provisions of this act. The term "employment agency" means and includes any person who procures, offers to procure, promises to procure, attempts to procure, or aids in procuring, either directly or indirectly, help or employment for another, where any fee, remuneration, privilege, profit, or any consideration, of any nature whatsoever, is promised, paid, or received therefor, either directly or indirectly. The term "fee" means and includes money, or a promise to pay money, and every form of and nature of remuneration, privilege, profit, or consideration, promised, paid, or received, directly or indirectly, for any service, of whatsoever nature, performed, offered to be performed, or promised to be performed by such employment agency. The term "privilege" means and includes the furnishing of food, liquors, supplies, tools, and shelter to laborers. The term "applicant for employment" means any person seeking work, employment, or engagement of any lawful character. The term "applicant for help" means any person or persons seeking help, employees, or performers in any legitimate enterprise; and the meaning of the terms "employment" or "help" shall not be limited to mean manual occupation, but shall include professional, and all legitimate, service.

SEC. 3. No person shall open, operate, maintain, or conduct, either temporarily or otherwise, any employment agency, or perform any of the acts authorized to be performed by an employment agency, in any city of the first or second class, without procuring a license from the director of public safety, as provided herein. The application for a license must be made in a form prescribed by the director of public safety, and may be made at any time; but every such license shall expire on the first day of October following its issue, unless sooner surrendered or revoked. Every applicant for a license shall furnish to the director of public safety, at the time of making his application for a license, a statement containing the full name of the applicant, his place of residence, and a description of the premises on which he desires to conduct an employment agency. If the applicant is a corporation, the application must specify also the names and addresses of the president, treasurer, and secretary thereof, or other officers performing corresponding duties under different

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names; and the director of public safety may, in his discretion, require the names and addresses of all the officers, including the directors, of any corporate applicant for a license. If the applicant is a partnership or unincorporated association, the names and addresses of all the members thereof must be specified in the application. The application must be subscribed by the applicant or applicants therefor, if natural persons; and if a corporation, in the corporate name, by the president or chief officer thereof, attested by the secretary or assistant secretary, with the corporate seal attached. Each application must state that the applicant or applicants is or are the person or persons who have the sole beneficial interest in the business established or to be established, and must have attached thereto an affidavit that all the statements contained in the application are true. The statements contained in said application for a license shall be received in evidence in all courts of this Commonwealth and shall be competent and sufficient prima facie evidence of all the facts stated therein; and for each and every misstatement in said application a city magistrate, justice of the peace, or any inferior magistrate, having original jurisdiction in criminal cases, shall have summary jurisdiction, and the right to impose, for each such misstatement, a fine of twenty-five (25) dollars. The application for a license shall be accompanied by the affidavit of two freeholders, of the ward in which the agency is sought to be established, that the applicant is a person of good moral character; or, if a corporation, that the officers thereof, and those under whose direction the business of the employment agency is to be carried on, are persons of good moral character; and the director of public safety may also require any other statements to be made in the application which he may deem necessary. A fee of fifty (50) dollars, for the use of the city, shall accompany each application for a license, which fee shall be returned if the license is not granted. Every application for a license shall be filed not less than one week prior to the granting thereof, and notice thereof shall be posted in the office of the director of public safety from the date of filing until the date of final action thereon, and a written protest may be made by any person against the granting of such license. The director of public safety shall either grant or reject said application for a license within thirty days from the time of the filing thereof.

SEC. 4. Each applicant shall file with his application for a license a bond, in form approved by the director of public safety, in the penal sum of one thousand ($1,000) dollars, with one or more sufficient sureties, conditioned that the applicant will not violate any of the duties, terms, conditions, provisions, or requirements of this act. If any person shall be aggrieved by the misconduct of any such licensed person, in violating any of the provisions of this act, and shall recover judgment against him therefor, such person may, after the return unsatisfied, either in whole or in part, of any execution issued upon said judgment, maintain an action in his own name, upon the bond of said licensed person, in any court having jurisdiction of the amount claimed, provided such court shall, upon application made for the purpose, grant leave to bring such action.

SEC. 5. The license certificate shall be furnished by the director of public safety, and shall be printed in a suitable manner. Such license shall not be used by any other than the person to whom it is issued, or at any place other than that designated in the certificate, and shall not be transferred or assigned to any other person. If a person holding a license certificate, authorizing him to conduct an employment agency under the provisions of this act, against whom no complaint, prosecution, or action is pending on account of any violation thereof, shall voluntarily surrender such license certificate, provided it has at least one month to run, the director of public safety shall refund to the person the sum of four dollars for each month which the certificate has yet to run, commencing with the first day of the month succeeding the one in which said license certificate is surrendered, unless such surrender be on the first day of the month. Every licensed person shall post his license certificate in a conspicuous place in his agency. If for any cause, as hereinafter provided in sections nine, ten, and eleven, such license is revoked, the director of public safety shall not issue another license to said person, to his representative, to his agent, or to any person with whom he is to be associated in the employment agency business. Whenever such license is revoked for violation of other provisions of this act, the director of public safety may, in his discretion, reissue a license, but not within a period of six months.

SEC. 6. No such agency shall be located on premises, or in connection with a building or premises, where intoxicating liquors are sold to be consumed on the premises, excepting cafes or restaurants in office buildings. No person shall procure or offer to procure help or employment in a room or rooms adjoining, either laterally or vertically, a room where intoxicating liquors are sold to be consumed on the premises, and no licensed person shall furnish intoxicating liquors to any applicant for employment.

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SEC. 7. Every licensed person shall keep accurate records, in the English language, in a form approved by the director of public safety, in which he shall enter or cause to be entered the name and address of every applicant to whom employment is promised or offered, the date of such application, the amount of the fee demanded, charged, or received, and, whenever possible, the name and address of former employers of persons to whom such applicant is known. In a separate register said licensed person shall enter or cause to be entered the name and address of every applicant to whom help is promised, the date of such application, the kind of help requested, the names of persons sent, with the designation of the one employed, the amount of the fee received, and the rate of wages agreed upon. The said records shall be open, during business hours, to inspection by the director of public safety, his deputy, or duly appointed inspectors, and it shall be unlawful for any person to make any false entry therein.

SEC. 8. The rate of fees which such licensed person intends to charge must be filed with the director of public safety, and a plain and legible duplicate, signed by the director of public safety, shall be conspicuously posted in each room of such agency. No such licensed person shall charge a fee in excess of the rates aforesaid, or receive or accept any valuable thing or gift as a fee or pledge, or in lieu thereof. The fee charged applicants for help or employment shall be good for a period of one month, and no additional or other fee shall be charged for any service rendered by such agency during this time, except when the employment or engagement is of a temporary nature, not to exceed in any single contract one month, then the fee shall not exceed ten per centum of the salary paid. Failure of said applicant for help to notify said licensed person that such help has been obtained, through means other than said agency, shall entitle said licensed person to retain the entire fee. In case an applicant for help or employment shall not obtain such through said agency, such licensed person shall, on demand, repay the full amount of the fee paid therefor, allowing a time which the director may deem reasonable to determine the fact of the applicant's failure to obtain help or employment. When, however, upon evidence satisfactory to the director of public safety, it appears that said licensed person has in good faith made an honest attempt to procure help or employment for said applicant, he will be entitled to retain, of such fee paid, an amount not exceeding fifty cents. It shall be the duty of such licensed person to give to every applicant for employment or help, from whom a fee shall be received, a receipt, in which shall be stated the name and address of said applicant, the date and amount of the fee, the period for which the fee is good, and the kind of employement or help for which it is paid. No fee or other payment shall be accepted by any such licensed person for any other purpose, except as herein provided, and no such licensed person shall divide fees with, or pay commissions to, persons to whom applicants are sent for employment. Every such licensed person shall post in a conspicuous place, in each room of his agency, a plain and legible copy of this act, which shall be printed in languages which persons commonly doing business with such agency can understand, and upon which appears the name and address of the office of the director of public safety, and advising that any misconduct on the part of any one connected with such agency should be reported to him.

SEC. 9. Whenever an applicant for employment is sent out of the city in which said agency is located, under contract for labor, he shall be furnished, at the time the agreement is consummated, and in a language which he can understand, a memorandum showing his destination, written in full, the name and address of his employer, the nature of the work to be performed, hours of labor (except in household), wages offered, and the terms of transportation. A duplicate shall be filed in said agency. Every such licensed person shall give to every applicant for employment, sent to a place within the city, a card containing the printed name and address of such employment agency, together with the name and address of the person to whom said applicant is sent for employment. No such licensed person shall furnish employment to any child, in violation of the laws regulating the labor of children or their compulsory attendance at school.

SEC. 10. No such licensed person shall furnish any female employee for immoral purposes; or send or cause to be sent any female employees to enter, as servant or inmate, or for any purpose whatsoever, any place of bad repute, house of ill fame or assignation house, or any house or place of amusement kept for immoral purposes, the character of which such licensed person could have ascertained upon reasonable inquiry. No such licensed person shall knowingly admit, or allow to remain in said agency, any person of bad character, prostitute, gambler, or intoxicated person.

SEC. 11. No such licensed person shall publish or cause to be published any false or fraudulent or misleading advertisement or notice relating to his employment agency; nor shall any such licensed person advertise his employment agency by

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means of cards, circulars, or signs, in newspapers or other publications, unless all such advertisements shall set forth the name of the agency, as such, and its address; nor shall any such licensed person use any letter heads, receipts or blanks not containing the name and address of such agency. No such licensed person shall give any false information, or make any false representation, concerning employment to any applicant, either for employment or help. No such licensed person shall send out any applicant without having obtained a bona fide order from the prospective employer, to whom said applicant is sent.

SEC. 12. The enforcement of this act, in each city of the first or second class, shall be intrusted to the director of public safety of said city, who is hereby authorized and empowered to appoint a deputy, who shall exercise all the powers of the director of public safety conferred by this act, and one or more inspectors, who shall have no duties to perform other than the enforcement of this act. The director of public safety shall also appoint such clerks and other assistants as may be required to enforce this act. The salaries of such deputy inspector, or inspectors, clerks, and assistants, shall be determined and provided by the councils of said city. Each agency, at least once in two months, shall be visited by an inspector, who shall make a written report thereof to the director of public safety, which shall be preserved in his office. All complaints shall be considered and disposed of by the director of public safety, or his deputy, after an investigation by an inspector under his direction. Complaints against any such licensed person may be made, orally or in writing, to the director of public safety or to his deputy, and notice of such complaint shall forthwith be given to said licensed person by the director of public safety or his deputy, and a hearing thereon shall be given by the director of public safety or his deputy, within three days after notice is given to said licensed person. A record shall be kept of all such complaints and hearings. The director of public safety or his deputy shall refuse to issue, or shall revoke, any license for a violation of any of the provisions of this act; but reasonable opportunity shall be given an applicant or the licensed person to defend himself. When it is shown to the satisfaction of the director of public safety or his deputy that any such licensed person is guilty of any immoral or fraudulent act, in connection with the conduct of his agency, it shall be the duty of the director of public safety or his deputy forthwith to revoke his license.

SEC. 13. Any person who shall open or conduct an employment agency, in any city of the first or second class, without procuring a license as required by this act, shall be guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine of not less than fifty nor more than five hundred dollars, or by imprisonment not exceeding one year, or both, at the discretion of the court.

Any licensed or other person who violates any of the provisions of this act shall be guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine of not more than one hundred dollars, or by imprisonment for not more than one year, or both, at the discretion of the court.

SEC. 14. The provisions of this act shall not apply to agencies which procure employment for school teachers exclusively; nor to registries of any incorporated association of nurses; nor to bureaus conducted by recognized medical institutions; nor to agencies exclusively engaged in procuring executive, technical, clerical, or sales positions for men only; nor to departments or bureaus maintained by persons, firms, or corporations, or associations, for the purpose of obtaining help for themselves, where no fee is charged the applicant for employment.

Approved the 25th day of April, A. D. 1907.

ACT NO. 162.—*Payment of wages due deceased employees.*

SECTION 1. From and after the passage of this act, it shall be lawful for any employer in this Commonwealth, at any time not less than thirty days after the death of his employee, to pay all wages due to such deceased employee to the wife, children, father or mother, sister or brother (preference being given in the order named) of the deceased employee, without requiring letters of administration to be issued upon the estate of said deceased employee, where such wages due do not exceed seventy-five dollars in amount: *Provided, however,* That if such deceased employees shall not leave a wife, children, father, mother, sister, or brother surviving him, then it shall be lawful for said employer to pay the wages due such deceased employee to the creditors, as follows: Undertaker, physician, boarding house keeper, and nurse, each his or her pro rata share of wages, not exceeding seventy-five dollars, due the deceased, upon affidavit of fact furnished, without letters of administration being issued.

SEC. 2. The payment of such wages shall be a full discharge and release to the employer from the wages so due and paid.

Approved the 23d day of May, A. D. 1907.

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ACT No. 167.—*Civil service—Labor service.*

SECTION 9. All examinations for positions in the classified service shall be practical in their character, and shall relate to such matters, and include such inquiries, as will fairly and fully test the comparative merit and fitness of the persons examined to discharge the duties of the office or employment sought by them. All examinations shall be open to all applicants who have fulfilled the preliminary requirements, stated in section ten of this act. The examinations of applicants for employment as laborers shall relate to their capacity for labor, their habits as to to sobriety and industry, and their experiences in the kind of work for which they apply. All applicants for any position in the classified service may, subject to regulations adopted by the civil service commission, be required to submit to a physical examination before being admitted to the regular examinations held by the commission. * * *

SEC. 19. The labor class shall include ordinary, unskilled laborers. Vacancies in the labor class shall be filled by appointment from lists of applicants registered by the civil service commission. Preference in employment from such lists shall be given according to regulations to be prescribed by the commission. The commission may establish separate labor lists for various institutions and departments. The commission shall require an applicant for registration for the labor service, before he can be registered, to furnish such evidence or to pass such examinations as it may deem proper with respect to his age, residence, physical condition, capacity for labor, sobriety, industry, and experience in the kind of work for which he applies.

Approved the 23d day of May, A. D. 1907.

ACT No. 206.—*Payment of wages of miners—Removing or defacing checks, etc.*

SECTION 1. Any person who willfully shall, from any loaded coal car in or about any mines, breaker, or yard, in this Commonwealth, take, remove, sever, carry away, obliterate, or destroy any ticket, card, tin slip, or other device or sign, used to indicate or identify the person or persons to whom credit or pay is or shall be due for the mining of coal in said car, or for the loading of said car, for the purpose of depriving such person or persons from getting credit or pay for said car, or for the purpose of defrauding such person in any manner, shall be deemed guilty of misdemeanor, and, upon conviction therefor, shall be sentenced to pay a fine not exceeding one hundred dollars or to undergo an imprisonment not exceeding one year, or either or both, at the discretion of the court; and the jury trying the case may infer such intent from the fact of taking, removing, carrying away, severing, obliterating, or destroying, in any manner, of such tickets, card, tin slip, or other device or sign, as aforesaid.

Approved the 28th day of May, A. D. 1907.

ACT No. 237.—*Employment of children—School attendance.*

[See Bulletin No. 73, pp. 782, 783.]

ACT No. 241.—*Employment of children—School attendance.*

[See Bulletin No. 73, pp. 783, 784.]

ACT No. 250.—*Accidents on railroads.*

SECTION 13. The [state railroad] commission shall investigate the cause of any accident on the lines or property of any common carrier, resulting in loss of life or injury to persons, within thirty days of the happening of said accident, when, in their judgment, said accident shall require investigation; and shall advise said common carrier of the result of said investigation, within sixty days from the happening of said accident, and shall include the result of said investigation in their reports. Before making any such examination or investigation, under this section, reasonable notice shall be given to the corporation, person, or persons, conducting and managing such common carrier, of the time and place of commencing the same. The general superintendent or manager of every common carrier shall inform the commission of any such accident immediately after its occurrence.

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Approved the 31st day of May, A. D. 1907.

ACT No. 328.—*Liability of railroad companies to workmen not employees.*

SECTION 1. The first section of an act, entitled "An act relating to railroad companies and common carriers; defining their liability, and authorizing them to pro-

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vide means of indemnity against loss of life and personal injury," approved April fourth, eighteen hundred and sixty-eight, which reads as follows:

"When any person shall sustain personal injury or loss of life while lawfully engaged or employed on or about the roads, works, depots, and premises of a railroad company, or in or about any train or car therein or thereon, of which company such person is not an employee, the right of action and recovery in all such cases against the company shall be such only as would exist if such person were an employee: *Provided*, That this section shall not apply to passengers," is hereby repealed.

Approved the 10th day of June, A. D. 1907.

ACT No. 329.—*Liability of employers for injuries to employees.*

[See Bulletin No. 74, pp. 81, 82.]

PHILIPPINE ISLANDS.

ACTS OF U. S. PHILIPPINE COMMISSION—1907.

ACT No. 1582.—*Protection of employees as voters.*

SECTION 29.

* * * * * * *

Any person who influences or attempts to influence a voter to give or to withhold his vote at an election by threatening to discharge such voter from his employment or to reduce his wages, or by promising to give him employment at higher wages, and any person who discharges any voter from his employment or reduces his wages for giving or withholding his vote at an election, shall be punished by imprisonment for not less than thirty days nor more than one year, or by a fine of not less than two hundred pesos nor more than five hundred pesos, or both, in the discretion of the court.

* * * * * * * *

Enacted, January 9, 1907.

ACT No. 1602.—*Examination, etc., of steam engineers—Coast trade.*

SECTION 1. Section one of act numbered seven hundred and eighty, * * * is hereby amended to read as follows:

Section 1. A board is hereby created, to consist of the insular collector of customs, the supervising inspector of hulls and boilers, and assistant inspector of hulls, one person holding an unexpired license as master in the Philippine coastwise trade, and one other competent person, whose duty it shall be to examine and certify for licenses all applicants for licenses as watch officers and engineers upon vessels of the Philippine Islands. The insular collector of customs shall be president of the board ex officio, and any three members thereof shall constitute a quorum for the transaction of business. This board shall be known and referred to as the "Board on Philippine Marine Examinations." The insular collector of customs is authorized to designate the persons who shall constitute the board, from among the classes above enumerated, and to detail from the clerical force provided for the bureau of customs a competent person to serve as secretary of the board without additional compensation: *Provided*, That nothing in this section shall be construed to make such secretary a member of the board for any other purpose: *And provided further*, That the expenses of the said board shall be paid from the regular appropriation for the bureau of customs.

Enacted, March 12, 1907.

RHODE ISLAND.

ACTS OF 1907.

CHAPTER 1429.—*Factories and workshops—Supply of drinking water.*

[See Bulletin No. 73, p. 964.]

CHAPTER 1458.—*Employment of children—Age limit.*

[See Bulletin No. 73, p. 792.]

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SOUTH CAROLINA.

ACTS OF 1907.

ACT No. 233.—*Hours of labor in cotton and woolen mills.*

[See Bulletin No. 73, p. 796.]

ACT No. 259.—*Emigrant agents.*

SECTION 1. No person shall carry on the business of an emigrant agent in this State without having first obtained a license therefor from the county treasurer of each county in which he solicits emigrants. Any person shall be entitled to a license, which shall be good for one year, upon payment into the county treasury, for the use of said county, two thousand dollars in each county in which he operates or solicits emigrants, for each year so engaged. Any person doing business of an emigrant agent without having first obtained said license, shall be deemed guilty of a misdemeanor and, upon conviction, shall be punished by fine, not less than one thousand dollars and not more than five thousand dollars, or may be imprisoned in the county jail or on the public works not less than four months, or confined in the state prison, at hard labor, not exceeding two years for each and every offense, within the discretion of the court.

SEC. 2. The term "emigrant agent," as contemplated in this act, shall be construed to mean any person engaged in hiring laborers or soliciting emigrants in this State, to be employed beyond the limits of the same.

Approved the 20th day of February, A. D. 1907.

SOUTH DAKOTA.

ACTS OF 1907.

CHAPTER 135.—*Employment of children.*

[See Bulletin No. 73, p. 797.]

CHAPTER 219.—*Liability of railroad companies for injuries to employees.*

[See Bulletin No. 74, pp. 85, 86.]

CHAPTER 220.—*Hours of labor of employees on railroads.*

SECTION 1. No common carrier, nor any officer nor agent thereof, shall require or permit any employee engaged in or connected with the movement of any train to remain on duty more than sixteen consecutive hours, or require or permit any such employee who has been on duty sixteen consecutive hours to go on duty without having had at least ten hours off duty, or require or permit any such employee who has been on duty sixteen hours in the aggregate in any twenty-four hour period to continue on duty or to go on duty without having had at least eight hours off without duty within such twenty-four hour period.

SEC. 2. In any prosecution for a violation of the preceding section, it shall be a sufficient defense to show that the employee was prevented from reaching his terminal by any casualty occurring before he started on his trip, or by accident or unexpected delay of trains scheduled to make connections with the train on which such employee was serving.

SEC. 3. Any common carrier and any officer or agent thereof violating any of the provisions of section one of this act shall, upon conviction thereof, be punished by a fine of not less than $100 or more than $1,000.

SEC. 4. The board of railroad commissioners shall fully investigate all cases of violation of this act, and for that purpose may subpœna witnesses, administer oaths, interrogate witnesses, take testimony and require the production of books and papers either within or without the State, and shall lodge with the proper states attorneys information of such violations as may come to its knowledge.

SEC. 5. The provisions of this act shall not be applied to relief or wreck trains.

Approved, February 13, 1907.

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CUMULATIVE INDEX OF LABOR LAWS AND DECISIONS RELATING THERETO.

[This index includes all labor laws enacted since January 1, 1904, and published in successive issues of the Bulletin, beginning with Bulletin No. 57, the issue of March, 1905. Laws enacted previously appear in the Tenth Special Report of the Commissioner of Labor. The decisions indexed under the various headings relate to the laws on the same subjects without regard to their date of enactment and are indicated by the letter "D" in parenthesis following the name of the State. Opinions of the Attorney-General on the construction, etc., of labor laws are similarly indexed, and are indicated by the abbreviation "Op." in parenthesis.]

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DEPARTMENT OF COMMERCE AND LABOR

BULLETIN

OF THE

BUREAU OF LABOR

No. 79—NOVEMBER, 1908

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BULLETIN

OF THE

BUREAU OF LABOR.

No. 79. WASHINGTON. NOVEMBER, 1908.

THE MORTALITY FROM CONSUMPTION IN DUSTY TRADES.

BY FREDERICK L. HOFFMAN.

INTRODUCTION.

The importance of dust as a factor in occupation mortality has attracted the attention of every authority on occupation diseases from Ramazzini to Thomas Oliver. It requires no extended consideration to prove that human health is much influenced by the character of the air breathed and that its purity is a matter of very considerable sanitary and economic importance. Aside from the risk of exposure to so-called air-borne diseases, the pollution of the atmosphere by organic and inorganic dust is unquestionably the cause of a vast amount of ill-health and premature mortality, but chiefly among men and women engaged in the many indispensable trades and occupations that minister to human needs. The sanitary dangers of air contaminated by disease-breeding germs are probably not so serious as generally assumed, while the destructive effects of the dust-laden atmosphere of factories and workshops are a decidedly serious menace to health and life. While the investigations of Doctor McFadden and Mr. Lunt seem to prove the paucity of bacteria in very dusty air, the evidence otherwise available is entirely conclusive that the risk to disease infection is much greater indoors than out in the open, where sunlight, rain, and wind in combination go far to purify the atmosphere by destroying the bacterial life contained in minute particles of suspended matter. Apart, however, from the transmission of disease through a dust-contaminated atmosphere, dust in any form, when inhaled continuously and in considerable quantities, is prejudicial to health because of its inherent mechanical properties, destructive to the delicate membrane of the respiratory passages and the

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lungs. It has long been known that those who live most of their time out of doors have a decided advantage over those who, because of their employment, are compelled to spend their working hours inside the home, the office, the factory, or the workshop, and it is an accepted axiom of modern sanitary science that measures and methods for the prevention of dust are a first and preliminary essential consideration in rational methods of sanitary reform. All that sanitary science can suggest or that sanitary legislation can regulate and change should be done for humane reasons and as a matter of governmental concern to mitigate the needless hardships of those who suffer in health and life as the result of conditions over which they themselves have but a very limited control.

The importance of dust as a factor in occupation diseases has been emphasized by all who have written on the subject, but by no one more precisely and clearly than by Sir James Crichton-Browne, in his address on the Dust Problem, read at the Sanitary Congress held at Manchester, England, in 1902, from which the following is quoted:

The mortality of the principal dust-producing occupations, compared with that of agriculturists, who live and work in what is practically dustless atmosphere, is excessive to a startling degree. It is not suggested that this excess is to be ascribed to dust alone, no doubt various factors contribute to it, but the facts that it is due mainly to respiratory diseases, that it is distributed amongst the several occupations pretty much in proportion to their dustiness, and that it has diminished in some instances where dust has been effectually dealt with, justify the conclusion that it is largely dust begotten.

Sir Crichton-Browne in continuation of his remarks pointed out that a detailed examination of the conditions of work in each of the 22 principal dusty trades brought out clearly the fact that the unhealthiness was born of or was primarily due to the dust inhaled by the workmen, and that there was always a well-defined relation between the death rate and the quantity and quality of dust present in the atmosphere. There is apparently no very material difference in the manner in which the different varieties of dust act upon the human organism, except where, in addition to mechanically injurious properties, the dust is of a poisonous character, which leads to diseases such as lead poisoning, phosphorous poisoning, anthrax poisoning, etc. Industrial mineral dust apparently acts with greater rapidity upon the lungs than organic dust, which is slower and more insidious in its operations, but in a general way follows similar lines. All varieties of dust, the immediate result of occupation, are, therefore, comprehended under the term of "industrial dust," which is specifically defined by Sir Crichton-Browne, as follows:

I select this dust for my further remarks because it is readily recognized and defined, because its pernicious effects are well marked and indisputable, because it is to a large extent, if not entirely, pre-

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ventable or removable, and because the efforts already made to prevent or remove it have been rewarded with conspicuous benefit. And I still further simplify and abbreviate what I have to say by restricting my observations to those varieties of it which are dust and nothing more, which are injurious by their physical properties and mechanical operations, and not as poisons to the systems, chemical destructives of the tissues, or bearers of bacterial invaders.

A similar but even more restricted limitation has been adopted for the present purpose, and only such occupations will be considered in detail in the following discussion as expose to the continuous and considerable inhalation of metallic, mineral, and vegetable fiber dust, and in which the evidence is at least fairly conclusive that the resulting disease liability and mortality from consumption and other respiratory diseases is above the average for occupied males generally.

Preliminary to a discussion in detail of the mortality from consumption in dusty trades it may prove of decided advantage to those who do not have access to the original sources of information to present a brief summary of qualified medical opinion regarding dust as a factor in occupation diseases and mortality. In a course of lectures on Unhealthy Trades, delivered before the Society of Arts, London, in 1876, Dr. B. W. Richardson[a] placed injuries from the inhalation by the lungs of fine particles of solid matter, usually defined as dust, at the head of the causes responsible for industrial diseases, and from his discussion the following is quoted:

The term "dusts," as I would here apply it, includes all those fine, solid particles which are thrown off from various substances in the processes of manufacture or treatment of articles in common use in daily life, such as earthenware utensils, knives, needles, or mechanical instruments, like files or saws; or ornamental things, such as ornaments of pearl, ivory, and turned wood; or articles that are worn, of silk, cotton, hemp, fur; or things that are used for food, such as flour; or for creating warmth, such as coal; or for using as a supposed luxury, such as tobacco and snuff. These are only a few illustrations; many others will naturally occur to those who think on the subject.

The dusts which inflict injury are of varied quality, as will be seen from the brief sketch just given. They are also of varied effect in regard to the specific injuries which they produce. We may profitably study them divided into different groups, according to their physical characters, as follows:

(*a*) Cutting dusts, formed of minute hard, crystallized particles which have sharp, cutting, and pointed edges. These dusts are composed of iron or steel, of stone, of sand or glass, of dried silicates in earthenware, of lime, of pearl.

(*b*) Irritant dusts, derived from woods, from ivory, from textile fabrics, fluffs of wool, of silk, of cotton, of flax, and of hemp, from hair, from clay.

(*c*) Inorganic poisonous dusts, derived from some poisonous chemical compounds used for coloring artistic products, or for preserving

[a] Scientific American Supplements, Numbers 9, 10, 18, 19, and 22, dated, respectively, February 26, March 4, April 29, May 6, and May 27, 1876.

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organic substances, such as furs. These dusts are charged with arsenical salts.

(*d*) Soluble saline dusts, derived from soluble crystalline substances used for dyeing purposes. The sulphate of iron, copperas, yields a dust of this class.

(*e*) Organic poisonous dusts, which are thrown off during the making up of tobacco into cigars and snuff. These dusts carry with them particles of the dried tobacco plant.

(*f*) Obstructive and irritating dusts composed of carbon, of fine particles of coal dust, of scrapings of carbon or of soot, of dust of rouge, and of flour.

Whatever may be the kind of dust to which the workman is subjected, to whichever of the above named he may be exposed, the primary cause of danger lies in the circumstance that the fine particles are borne by the air into the lungs. They pass, wafted by the air, through the mouth and nostrils into the windpipe; they pass along the bronchial tubes; in some instances they reach and traverse the bronchial passages which lie between the larger bronchial tubes and the minute air vesicles, or they even reach the air vesicles themselves.

An American authority on occupation diseases has referred to the subject at some length in an article contributed to Buck's Hygiene and Public Health, printed in 1879. This writer, Dr. Roger S. Tracy, for many years registrar of vital statistics of New York City and sanitary inspector of the board of health, makes the following statement with particular reference to the special form or type of disease resulting from the inhalation of metallic and mineral dusts:

The disease comes on very gradually, like the more slowly developed forms of phthisis pulmonalis, and its duration may be extended over four or five years. It begins with the cough of irritation, dry and hacking at first, with very scanty expectoration, whitish and stringy in character; there is no haemoptysis, but sometimes nausea and vomiting in the morning. Auscultation at this time reveals puerile respiration, with occasional slight râles. The expectoration gradually increases in amount and becomes reddish, and soon after this tinge appears there may be haemoptysis. There is dyspnœa on slight exertion, and dullness over the whole chest, with weak respiration and mucous râles. There is no fever, and the appetite and strength are still good. If work is abandoned at this time recovery is not only possible, but in most cases probable. If work is continued, the lung tissue begins to break down, and cavities form near the apices. Expectoration is very profuse, and there may be severe hemorrhages. There is general dullness on percussion, and the last traces of vesicular respiration give way to sibilant, large mucous and cavernous râles. Fever is continuous, with evening exacerbations, night sweats, emaciation, insomnia, and great dyspnœa, soon followed by death.

Very suggestive also are the observations and conclusions of Dr. John Syer Bristowe, F.R.S., who in an address on industrial diseases, read at the conference on sanitary subjects held in connection with

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the International Health Convention of 1884, discussed the effects of nonpoisonous irritants on the lungs, in part as follows:

Occupations which habitually expose the workmen to the inhalation of abundant solid particles that are incapable of solution or removal by the animal tissues or secretions, in many cases induce chronic diseases of the lungs, which are known as the asthmas or consumptions of the several occupations referred to, and tend very materially to shorten life among those engaged in them. Workers in coal mines and in copper mines, grinders, millstone makers, and flax dressers are perhaps especially liable to suffer from such causes. It is marvelous how tolerant the bronchial tubes and lungs are of foreign particles which are drawn into them with the breath. Wherever smoke impregnates the atmosphere, as in London and other manufacturing towns, its particles are conveyed in greater or less abundance into the lungs; whence some are expelled with the expectoration, which presents, consequently, a slaty or black appearance, while some get absorbed, and becoming deposited in the tissue of the lungs, produce in them that black mottling which increases with advancing years, and is well known to pathologists. Yet, as a general rule, the soot-studded organs remain practically healthy, and no clinical evidences of pulmonary disease manifest themselves. The same remarks doubtless apply to the inhalation of the siliceous particles of ordinary dust. The effects are different, however, when such matters are inhaled in large excess. * * * The symptoms under which the sufferers labor have some resemblance to those of chronic phthisis, some to those of chronic bronchitis and emphysema, for either of which they may well be mistaken. They consist in gradually increasing shortness of breath, lividity of surface, feebleness of circulation, and cough, with more or less abundant expectoration; to which, at a later period, general dropsy and haemoptysis may be superadded. There is generally a total, or almost total, absence of fever. The only methods, so far as I know, by which the irritative diseases of the lungs, just considered, can be lessened or prevented, are by providing good ventilation, and (when possible) by adopting methods to prevent the diffusion of particles or dust in the atmosphere which the workmen have to breathe. It is obvious, too, that since the diseases are insidious in their progress, and increase in proportion as the inhaled particles accumulate, it would be well for persons who present early traces of them to seek at once some other kind of employment.

The most qualified and extended discussion of the entire subject of the inhalation of dust, its pathology and symptomatology, with special reference to dusty trades, is by Dr. J. T. Arlidge, who, in 1892, published a treatise on The Hygiene, Diseases, and Mortality of Occupations. "Few, indeed," he argued, "are the occupations in which dust is not given off," and "in none can it be absolutely harmless, for the lung tissue must be just so much the worse, and less efficient for its purpose, in proportion to its embarrassment by dust." And in continuation:

What occurs to the ordinary citizen becomes magnified ten or a hundredfold to those engaged in dusty occupations, and more espe-

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cially where the dust itself possesses noxious properties. But unless dust has this latter quality, it is remarkable with what indifference its inhalation is treated by the majority of workmen. In one sense, indeed, it is unfortunate that it does not, for the most part, awaken attention by any immediate tangible consequences. Its disabling action is very slow, but it is ever progressive, and until it has already worked its baneful results upon the smaller bronchial tubes and air cells and caused difficulty of breathing, with cough and spitting, it is let pass as a matter of indifference—an inconvenience of the trade.

Arlidge called attention to the fact that bronchitis, asthma, and fibroid and tubercular consumption ranked foremost in the causes of British mortality, holding that without doubt these maladies were largely attributable to the inhalation of dust operating per se, or in conjunction with constitutional proclivities and insanitary surroundings. In further continuation he remarked that—

Pathologists tell us of the presence of bacilli in tubercular disease, and favor the belief that these minute bodies are the cause of it. This notion may represent a whole truth or only a partial one; in my opinion, the latter. For I doubt if these bacilli actually develop phthisis unless there be some antecedent change in the vitality of the affected tissue; a change wrought by depressing causes connected with the mode of life, or with constitutional debility and inherited taint, or with the occupation followed; of which contributory factors two or more may cooperate. And assuredly the breathing of dust may be reckoned as one such of no light energy. In other words, I look upon a phthisical lung as one prepared for the germination and multiplication of bacilli, and not a primary product of those microscopic organisms, nor of the products of their organic existence.

The conclusions of Arlidge are summarized in the statement that "One practical lesson is to be gained by these considerations—namely, that persons predisposed to respiratory diseases and phthisis ought not to engage in dusty occupations."

More recently the entire subject of occupation diseases in their relation to workmen's compensation has been considered at length and in much detail by a British departmental committee appointed to consider the pressing and important question of workmen's compensation for industrial diseases. In its observations upon respiratory diseases, and in particular bronchitis, pneumonia, and phthisis, and their relation to occupation exposure, the committee concluded that—

Pulmonary disease manifests itself in three kinds or forms—as ordinary tuberculous phthisis, acute or chronic; as "fibroid phthisis," and as a mixed form when a tuberculous process is ingrafted sooner or later upon the fibroid. Fibroid phthisis is always a slow disease. It consists in a chronic reactive inflammation around the many minute foci of dust inhalation, which by coalescence gradually invades large areas, impairing and strangling the proper lung tissues in corresponding measure. Again, a lung so impaired is very apt to har-

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bor bacilli, especially the bacillus of tubercle, by the influence of which it may be still further destroyed. Thus both fibroid phthisis uncomplicated and fibroid phthisis with the supervention of tubercle are in their nature occupational disease.(a)

The committee, in its final report, describes the typical forms of fibroid phthisis as induced by the inhalation of industrial dust, holding that—

The first symptom is a cough which insidiously, and for a while almost imperceptibly, becomes habitual. At first in the morning only, it gradually becomes more frequent during the day, and expectoration, nominal at the beginning, becomes more marked, though not profuse until the latter stages of the disease. Leaving out of account the more rapid progress of the disease in tin and gold miners, these symptoms of a negative phase of purely local damage may last for years—ten or fifteen or even more—without advancing to such a degree as to throw the workman out of employment or even to cause him serious inconvenience. At some period, however, rarely less than ten years and frequently more than twenty, of continuous employment, in a like imperceptible manner the breathing gets shorter and the patient finds himself less and less capable of exertion. Yet, even when the cough and dyspnœa have reached a considerable degree, there are no signs of fever, as is the case of pulmonary tuberculosis; the flesh does not fall and the muscles retain their strength and volume. Thus even at a period when the malady is fully established the general health may be but little impaired, and the patient may not be compelled to cease work. Herein fibroid phthisis presents a well-marked difference from pulmonary tuberculosis; and even if, as we have said, the disease becomes complicated with tubercle, yet the rate of progress may be determined rather by the character of the primary than of the secondary disease, though usually the supervention of tubercle hastens the sufferer into a more rapid consumption.(a)

The results of all these researches into an almost neglected field of preventive hygiene prove that occupation diseases, properly so called, demand the most thoroughly qualified and medical supervision of factories and workshops and the periodical medical examination and inspection of persons employed in recognized unhealthy trades. For, as the committee referred to points out, "If in the early stage of fibroid phthisis the workman leaves the dusty employment for work in agriculture or in other occupation in air free from irritating particles, the disease may be practically arrested; that is, although the part affected may proceed to obliteration, the disease would not extend to other parts of the lung, and the portion destroyed would be negligible as a factor of health and capacity."(b)

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[a] Report of the Departmental Committee on Compensation for Industrial Diseases, 1906, p. 13.

[b] Report of the Departmental Committee on Compensation for Industrial Diseases, 1906, p. 14.

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The conclusion of this investigation, the most important official inquiry ever made into the subject of industrial diseases, fully warrants the view that while ordinary tuberculous phthisis can not be regarded as a disease specific to any occupation, fibroid phthisis in its latter stage, and when the history of the case is known, can be clearly distinguished from tuberculous phthisis, so that it may be regarded as an established fact that fibroid phthisis is a disease specific to the employment in certain trades, of which the committee mentions the following: Grinders, continuously using either grindstones or emery for the abrasion of metals, especially steel; potters engaged in certain processes; stone workers employed on certain kinds of stone, especially if not working in the open air; tin miners, in particular such as have previously been exposed to the exceedingly unhealthy conditions of the gold mines of the Transvaal; and ganister miners, including men employed in certain processes of ganister brick making. The committee did not arrive at final conclusions regarding persons employed in the slate industry, nor of employees in the working of asbestos, and many other recognized unhealthy trades, partly, no doubt, because of the limited scope of the inquiry and the paucity of conclusive statistical data. It is pointed out by the committee that it was not possible to separate the English death rates from fibroid phthisis from those of other diseases of the respiratory system, since medical men do not, as a rule, distinguish that disease when certifying the causes of death. It is clearly established by the results of the investigation that such a distinction should be made and that medical practitioners should qualify the death returns from tuberculosis in all cases where the death was the result of fibroid phthisis.

The committee, having arrived at the opinion that fibroid phthisis is a specific and distinguishable trade disease, concluded that employers might properly be required to pay compensation to their work people who contract it; but it did not, however, recommend the extension of the Workmen's Compensation Act to the disease for two reasons. The first was that owing to the long period of its development it would not be right to lay the whole burden on the employer under whom the workman had been serving during the twelve months prior to the incapacity. The other and more important reason was that for several years before the nature of the disease can be definitely diagnosed the patient may suffer from symptoms that while not distinctive are sufficient to prevent him from securing employment.

In the partly descriptive account of 42 occupations considered in detail in this article only the most general facts have been included to emphasize, as far as possible, the industrial processes productive of conditions more or less injurious to health in general and to the development of tuberculosis in particular. Authorities are referred to only as far as this has seemed necessary to clearly establish in the

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case of each trade or occupation considered the facts of a more or less excessive degree of consumption frequency aside from the statistical sources of information which form the basis of the subsequent conclusions, except in the case of a few employments for which neither general vital statistics nor insurance mortality experience are as yet available. The term "tuberculosis" is used in a very general sense, and as a rule limited to phthisis pulmonalis, or consumption, unless otherwise stated. All of the references to insurance mortality experience are limited to the mortality from phthisis pulmonalis and do not include other forms of tuberculosis or other forms of respiratory diseases unless specifically stated in the text.

STATISTICAL DATA AND METHOD OF DETERMINING THE DEGREE OF CONSUMPTION FREQUENCY.

The principal statistical data used in the present discussion are, first, the occupation returns by divisional periods of life of the United States census for 1900; second, the occupation mortality statistics of the Twelfth Census, published in 1904; third, the occupation mortality statistics of Rhode Island for the decade ending with 1906; fourth, the occupation mortality statistics published decennially as a supplement to the report of the Registrar-General of Births, Marriages, and Deaths for England and Wales for the two periods 1890–1892 and 1900–1902; fifth, the corresponding statistics for Scotland; and sixth, the industrial mortality statistics of the Prudential Insurance Company of America for the decade 1897 to 1906, published in connection with the company's exhibit of the mortality from consumption in dusty trades at the International Congress on Tuberculosis, held in Washington, D. C., in 1908, and presented in a discussion of the same subject before the American Association of Medical Examiners in September, 1907, and the Medical Society of the County of New York in December, 1907.

Four different statistical methods are available to determine with approximate accuracy the degree of consumption frequency in different trades. Absolute accuracy is not obtainable in investigations of this kind, nor is it necessary for the end in view.

The first method is to determine the numbers living at ages 65 or over in different trades, and to compare the same with the corresponding proportion for occupied males generally. This method is never conclusive by itself, but is useful in conjunction with the use of other statistical data. It is evident, of course, that other factors besides mortality determine the proportion of persons at work in differer occupations at ages 65 or over, and the method, therefore, requ to be used with extreme caution.

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The second method is to determine the true rate of mortality from all causes, or specific causes such as consumption, by ascertaining the number of deaths occurring in every thousand persons of any particular trade or industry exposed to the risk of death for a single year. This method is by far the most satisfactory, but it is seldom that accurate information is available regarding the living population, and estimates of the numbers exposed to risk are likely to be seriously misleading. The chance of error is increased by the method employed in the Twelfth Census, since the occupation classification of the census is probably not exactly the same as the occupation classification of the different boards of health throughout the country, where the original entries are made as to the occupation of decedent at the time of death.

The third method is to determine the proportion of deaths from a specified cause, such as consumption, occurring in the mortality from all causes, without reference to ages at death. This method is made necessary in the use of the Rhode Island statistics, which are not returned by divisional periods of life. The same is true also of the occupation mortality statistics of the United States census by specified causes, but when used with extreme caution the proportions thus determined are often extremely suggestive and quite often entirely conclusive.

The fourth method is known as the proportionate mortality figure, by which the proportion of deaths from any particular disease, such as consumption, is calculated as a percentage of the deaths from all causes occurring during specified periods of life. This method has been extensively employed in the present discussion, since otherwise the available industrial insurance mortality statistics could not have been utilized. It is, in a measure, the most satisfactory and determining of all the various methods referred to, since it determines with absolute accuracy the actual incidents or degree of consumption frequency at specified periods of life.

The industrial insurance mortality statistics are derived from the experience of a large and representative company, which has from time to time given publicity to the facts of its experience. The resulting proportionate mortality returns, however, indicate a specific mortality from consumption somewhat below the actual, since the experience is, to a certain extent, affected by medical selection. In other words, the proportionate mortality from consumption, or the true actual loss from the disease at specified periods of life, would have been somewhat higher if medical selection had not been made use of. In comparing this experience with the adopted standard for the registration area of the United States the comparison is, therefore, somewhat more favorable to the various trades and occupations considered than would have been the case if the returns could have

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been derived from the registration records of the different States and cities comprehending the experience of the company referred to.

The proportionate mortality figure may be briefly explained as follows: At ages 25 to 34, out of every 100 deaths from all causes in the registration area of the United States during the seven years ending 1906, 31.3 deaths were from consumption. The corresponding proportions of deaths in the industrial insurance mortality experience were 70.8 per cent for grinders, 66.7 per cent for compositors, 58.5 per cent for upholsterers, 52.9 per cent for potters, etc. The difference between the normal proportionate consumption mortality for the registration area as a whole and the corresponding proportionate mortality from consumption in the different occupations considered in detail, measure approximately the health-injurious circumstances of the different employments.

OCCUPATION CLASSIFICATION OF DUSTY TRADES.

The following occupation grouping has been adopted to emphasize the dust hazard in principal occupations and to facilitate ready reference to the various employments considered in some detail in the subsequent discussion:

Group 1.—Exposure to metallic dust:
1. Grinders.
2. Polishers.
3. Tool and instrument makers.
4. Jewelers.
5. Gold leaf manufacture.
6. Brass workers.
7. Printers.
8. Compositors.
9. Pressmen.
10. Engravers.

Group 2.—Exposure to mineral dust:
11. Stone workers.
12. Marble workers.
13. Glass blowers.
14. Glass cutters.
15. Diamond cutters.
16. Potters.
17. Cement workers.
18. Plasterers.
19. Paper hangers.
20. Molders.
21. Core makers.
22. Lithographers.

Group 3.—Exposure to vegetable fiber dust:
23. Cotton ginning.

Group 3.—Exposure to vegetable fiber dust—Concluded.
24. Cotton textile manufacture.
25. Spinners.
26. Weavers.
27. Hosiery and knitting mills.
28. Lace making.
29. Flax and linen manufacture.
30. Hemp and cordage manufacture.
31. Manufacture of jute and jute goods.
32. Paper manufacture.
33. Cabinetmakers.
34. Wood turners and carvers.

Group 4.—Exposure to animal and mixed fiber dust:
35. Furriers and taxidermists.
36. Hatters.
37. Silk manufacture.
38. Woolen and worsted manufacture.
39. Carpet and rug manufacture.
40. Shoddy manufacture.
41. Rag industry.
42. Upholsterers and hair-mattress makers.

The grouping is necessarily a more or less arbitrary one since all occupations involve exposure to more than one particular kind of

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dust, but it is safe to assume that the predominating character of a particular dust exposure primarily determines the resulting departure of the consumption mortality from the normal for the general population. All the groupings of dusty trades which have been adopted by Hirt, Merkel, Arlidge, Oliver, and others have this limitation in common. Since no entirely conclusive investigation has been made to afford the material for a final and strictly scientific classification of dusty trades, the grouping adopted will serve at least the purpose of a convenient arrangement with a strict regard to the facts as they are known and understood at the present time.

OCCUPATIONS WITH EXPOSURE TO METALLIC DUST.

In the group of occupations exposing to a continuous and considerable inhalation of metallic dust resulting from industrial processes have been included for the present purpose the following representative employments: Grinders, polishers, tool and instrument makers, jewelers, gold-leaf manufacture, brass workers, printers, compositors, pressmen, and engravers. These occupations are all more or less subject to an excessive death rate from all causes, but in particular to a decided excess in the proportionate mortality from consumption, and in most cases also to a comparatively high degree of frequency in the occurrence of other respiratory diseases. The details of labor conditions, as far as they could be conveniently included in the following summary of observations regarding particular trades, appear to fully confirm the opinion that the degree of excess in consumption frequency is intimately related and in almost exact proportion to the degree of exposure to continuous and considerable inhalation of metallic dust.

GRINDERS.

The grinding trade includes a large variety of employments, of which metal grinding, by either the dry or wet process, is hygienically as well as industrially the most important. The grinding of metal involves exposure to decidedly health-injurious conditions, probably as much so if not more than in any other employment. Chiefly as the result of the inhalation of relatively large quantities of fine metallic dust, and not inconsiderable quantities of fine mineral dust, the mortality from consumption in this occupation is decidedly above the normal for occupied males generally. While the sanitary and other conditions injuriously affecting the health of metal grinders never have been so notoriously bad in the United States as in England or in continental Europe, the observed mortality of this occupation as carried on in this country fully warrants the most serious conclusions as to the health-injurious effects of this group of employments.

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The mortality of metal grinders has been discussed by James H. Lloyd, M. D., in his treatise on "Diseases of occupations," included in the Twentieth Century Practice of Medicine, published in 1895. Lloyd, after calling attention to the well-known fact that the trade of the grinder is conspicuous above all others for the suffering that is entailed from the inhalation of metallic dust, describes in detail the different processes of grinding and their relation to health, from which the following is quoted:

Grinding edge tools is of two kinds—wet and dry. The latter method is by far the more injurious, as, naturally, it raises far the greater amount of dust. For some tools both methods are used—the mixed method. The tools ground are scythes, saws, table knives, machine knives, various other kinds of edge tools, files, penknives, razors, scissors, forks, needles, etc. A great difference in their bad effects is observed among the branches of the trade according as the grinders use the wet or dry method and according to the tool ground. The smaller objects are far the most trying and exacting upon health. The worst of all branches are the fork grinding and needle grinding. This is because in grinding these small objects the workman is obliged to lean close over the stone and therefore inhales large quantities of the dust, and also because the dry grinding is used.

The dust raised by grinding is composed largely of minute bits of steel. According to Hall, 12 razor blades forged in the rough, which weigh 2 pounds and 4 ounces, lose 10 ounces in the process of grinding. This loss represents so much fine metallic dust, mingled of course with dust from the stone. This statement gives some idea of the immense amount of dust produced by dry grinding. According to Holland the concrete masses of this dust formed in needle grinding have almost the specific gravity of iron.

In discussing the symptoms of the diseases typical of grinders as the result of their employment, Lloyd points out further that—

They are those of a slowly advancing bronchitis with asthma and sometimes with emphysema; later dilated bronchi with excavation are observed; then, consolidation, and breaking down of lung tissue occur as the terminal processes. The exact relationship of these processes to a tubercular infection in grinders is an interesting and important subject, which, of course, did not receive much light from the earlier writers. They endeavored, in fact, to draw distinctions between true "consumption" and grinder's "asthma," but the state of pathological knowledge in their day was not such as to permit them to do otherwise. It is quite evident from reading their reports of cases that they had to do with a disease that was essentially tubercular, but it would be interesting to have the exact relationship of this infection to the grinder's unwholesome occupation investigated by the methods of modern bacteriology. I do not know whether this has ever been done. There can be no doubt that the influence of the grinder's trade is that of a predisposing cause. The inhalation of the irritating particles of steel into the lungs causes a constant catarrhal bronchitis and pneumonitis, with increase of connective tissue; and this prepares the soil for a tubercular infection which characterizes the latter stages of the disease.

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The most recent qualified discussion of the health-injurious circumstances of dry and wet grinding is by Oliver, who, in his Diseases of Occupation, goes fully into all the details concerning the trade, including a brief account of the corresponding conditions in the cutlery manufacture of Germany, at Solingen:

So far as the two methods of grinding cutlery are concerned, the dry method is, from a health point of view, the more dangerous to the workers. The dust is dry, and is in the form of a very fine powder, which readily reaches the lungs owing to the attitude of the men when at work. Steel grinders sit astride the grinding stone on a saddle, and as they lean forward keeping close to their work, they can not but inhale some of the dust, which is a mixture of steel and stone. Forks and needles are generally ground by the dry method; knives, scissors, and razors by the wet. Some are ground by both methods, e. g., the backs of razors and scissors are ground by the dry method and the remainder of the blade by the wet. It was in 1865 that Dr. T. C. Hall, of Sheffield, drew attention to the high death rate of steel grinders from pulmonary phthisis. The average age at death of steel grinders was at this period only 29 years, but of late this has improved. Doctor Hall's statistics referred to dry grinding. In wet grinding the running stone passes through a thin layer of water in a trough below the stone, so that, as its surface is always kept wet, comparatively little dust is given off during the process of grinding; but while the atmosphere is clearer of dust, the floors and walls of the workshop are damp and cold. The grinding is carried on in rooms called "hulls," which are bounded by three blank walls; the windows are without glass. Where dry grinding is carried on there are fans, but these often prove ineffective. It is no uncommon thing to find men engaged in different processes in one large room, so that the dust which is generated affects not only the workman sitting at his own grinding stone, but the other inmates of the room as well. In Sheffield it has been ascertained that in every 1,000 deaths among steel grinders pulmonary phthisis is the cause of 345 and other respiratory diseases 295; that is, collectively, pulmonary diseases account for 64 per cent of the entire mortality, whereas among the adult population of the country generally phthisis accounts for 144 deaths per 1,000 and other respiratory diseases 182, or collectively 32.6 per cent. Steel grinders die comparatively young. Dr. Sinclair White, in Dangerous Trades, page 414, says that 458 grinders in every 1,000 die between the ages of 35 and 55, compared with 261 in every 1,000 of the entire male population of the country. Only 140 grinders out of every 1,000 reach the age of 55 and upward, whereas for every 1,000 of the adult male population 391 reach 55 years and upward. Sinclair White is of the opinion that phthisis is not so rife among steel grinders as formerly. In Doctor Hall's time the average age at death from phthisis was 29 years; at present it is 43.(a)

With reference to conditions in Germany and the remarkable improvement which has followed the introduction of sanitary precau-

[a] Diseases of Occupation, Thomas Oliver, pp. 230, 231, London, 1908.

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tions, rational methods of ventilation, and other means of dust prevention, Oliver holds:

In the town of Solingen and the neighborhood it is estimated that there are 29,000 persons employed in making cutlery. Here all sorts of steel goods are made—knives, forks, scissors, and swords. A good deal of the work is done by the people in their homes, and it is interesting to know that the home industry is rather encouraged by the local authority, which provides the men with gas and electric power. So prevalent is pulmonary consumption among the grinders in Solingen that it has attracted the attention of the Government Factory Department. In the ten years 1885–1895 72.5 per cent of the deaths among knife grinders in the Solingen district was due to phthisis, against 35.3 per cent for the rest of the population over 14 years of age, and an official examination showed that out of 1,250 grinders only 85 men were over 45 years of age. Doctor Shadwell speaks approvingly of the methods adopted in some of the Solingen factories to deal with the removal of dust. Oldendorf, in writing about the grinders at Solingen, states that 24.7 per cent reached 50 years of age and 3.3 per cent 70; that at Runsched 33.8 per cent reached 50 years and 8.0 per cent 70; while at Kronenberg the numbers were 32.9 and 8.7, respectively. The mean age at death of grinders employed in the dry methods was 39.4, of workers in iron 48.3, and of the rest of the male population 54.4 years. Taking all ages, the deaths from tuberculosis per 100 cases were for grinders 78.3, iron workers 59.0, other persons 46.0.(a)

A very interesting account of the mortality of cutlery grinders in Solingen was also included in the Report of the Chief Inspector of Factories and Workshops of England for 1906, from which an abstract is made to emphasize the sanitary and labor conditions necessary to reduce the mortality of grinders to a minimum:

The atmosphere of Solingen is bright and clear. It is seldom that black smoke is seen escaping from the factory chimneys. This is largely the result of careful firing and the use of coal briquettes instead of ordinary coal, which avoids the use of slack coal. The day's actual work is nine hours; on Saturday work ceases at 5.30 p. m. The factories in Solingen are said to be marvels of order and cleanliness; the floors are of concrete and the air space for each worker must be at least 565 cubic feet. All the grinding stones are protected by guards. The walls of the workrooms are limewashed every year; the floors are swept every evening and damp-wiped once a week. The "rasing" of grindstones is never undertaken during working hours except under a stream of water or unless the stone is entirely inclosed in casing except at the working place of the rasing tool. The floors are kept clean and provision is made for the removal of the dust during grinding. Cutlery manufacture is recognized as a dangerous trade in Solingen, and in recent years considerable improvement has taken place in the means to prevent dust. In Solingen the grindstones and polishing wheels are run toward the worker; in Shef-

(a) Diseases of Occupation, Thomas Oliver, p. 232.

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field they are run away from the worker, so that the dust has an upward tendency and flies into the room.(a)

The subject is also considered in the Report of the Chief Inspector of Factories and Workshops for 1907, in which the rules or police regulations governing the trade at Solingen are republished in full. A remarkable improvement in the health of the workmen has followed the introduction of these rules.

The most conclusive mortality data of metal grinders are for Sheffield, England, and from the annual reports of the medical officer of health are tabulated the deaths of grinders occurring within the period 1889 to 1906, including 2,045 deaths from all causes, of which 837 were from consumption and 543 from respiratory diseases other than consumption. The data are given in tabular form below, by divisional periods of life, with the resulting mortality from consumption and other respiratory diseases at specified ages:

PROPORTIONATE MORTALITY FROM CONSUMPTION AND FROM OTHER RESPIRATORY DISEASES COMPARED WITH THAT FROM ALL CAUSES AMONG GRINDERS, IN SHEFFIELD, ENGLAND, 1889 TO 1906, BY AGE GROUPS.

[From annual reports of the Medical Officer of Health, Sheffield, England.]

Age at death.	Deaths from all causes.	Deaths from consumption.		Deaths from respiratory diseases other than consumption.	
		Number.	Per cent.	Number.	Per cent.
Under 25 years	85	36	42.4	20	23.5
25 to 34 years	246	135	54.9	44	17.9
35 to 44 years	416	235	56.5	69	16.6
45 to 54 years	575	263	45.7	151	26.3
55 to 64 years	452	139	30.8	167	36.9
65 years or over	271	29	10.7	92	33.9
Total	2,045	837	40.9	543	26.6

According to this table, at ages under 25, of every 100 deaths from all causes, 42.4 were from consumption, increasing to 56.5 at ages 35 to 44, decreasing subsequently to 30.8 at ages 55 to 64, and to 10.7 at ages 65 or over. The corresponding mortality from respiratory diseases other than consumption was also excessive at every period of life.

There are no similar data for the United States except the industrial insurance mortality statistics of grinders, limited to 128 deaths from all causes, of which 63, or 49.2 per cent, were from consumption. Of the mortality of grinders from respiratory diseases other than consumption, 15 were from pneumonia, 5 from asthma and bronchitis, and 2 from other respiratory diseases. If the deaths from consumption and other respiratory diseases are combined, a total of 85, or 66.4 per cent of the mortality of grinders, was from diseases of

[a] Report of the Chief Inspector of Factories and Workshops, 1906, pp. 107–109.

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the lungs and air passages. The excess in the mortality of grinders from consumption is clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life compared with that of all males in the registration area of the United States:(a)

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG GRINDERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for grinders from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of grinders, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Grinders.	Males in registration area, 1900 to 1906.
15 to 24 years	7	4	57.1	27.8
25 to 34 years	24	17	70.8	31.3
35 to 44 years	38	24	63.2	23.6
45 to 54 years	30	12	40.0	15.0
55 to 64 years	20	5	25.0	8.1
65 years or over	9	1	11.1	2.7
Total	128	63	49.2	14.8

While according to this table the proportionate consumption mortality of grinders was excessive at all ages, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes, 70.8 were from consumption, against a normal expected proportion of 31.3. The data are unfortunately very limited, but they are at present the only trustworthy source of information regarding the mortality of grinders in the United States. The number of deaths is sufficient, however, to warrant the conclusion that the mortality from consumption in this occupation is very considerably above the normal for the general population.

POLISHERS.

The polishing of metal ware is a widely diversified trade, and the term "polisher" is one of general rather than of special significance. Under the term are included metal polishers and buffers working upon steel, brass, gold, and silverware, but no data are available which would permit of a proper classification of polishers according to the metal or material manipulated. The health-injurious effects of this employment have been recognized by all who have written

[a] The registration area, from which mortality statistics were secured by the Bureau of the Census, included in 1906 about one-half (48.8 per cent) of the total estimated population of continental United States.

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upon the mortality of dusty trades, and the more important facts are summarized by Arlidge in part as follows:

After being shaped and ground to the required dimensions, the next business is to burnish or polish the articles. This is accomplished by wheels covered by leather, and also by a thick bundle of linen rags cut and bound together in the form of a wheel, and which, by rapid rotation, assumes the character of a solid mass, and, at the same time, one so soft as to serve better than any other contrivance for the purpose of surface polishing. To assist in giving polish to the articles made various powders are employed; for example, emery, whiting, rouge, powdered pumice, etc. The use of these materials adds vastly to the dust of the trade and to its pernicious results; but no data are in existence to indicate what is its share in the causation of disease as compared with the dust of the grindstones. Still, no question exists that these polishing powders, differing as they do among themselves in physical qualities, differ likewise in the range of their effects upon the lungs.

The rather involved circumstances affecting the polisher's health and mortality are also discussed in The Workers of the Nation, by Mr. Gilson Willets, whose attention appears to have been attracted by the particularly health-injurious conditions of the employment, and whose conclusions are decidedly suggestive:

Metal polishers who have reached the age of 40 often look like old men. There can hardly be found a trade more deleterious to health, say those who follow it. Among the harmful conditions may be mentioned the liability of the workmen to get their lungs full of flying and impalpable dust, which is composed of metal, minerals, and cotton fiber. They are also, in many cases, deprived of the proper supply of light, and great injury to the eyes thus arises. It is not easy to wear goggles or glasses, as the operator's sight must be of the keenest in order to detect blemishes. There are laws for the protection of this class of workmen, but they are too seldom employed. New York statutes require that at each polishing lathe there shall be an exhaust fan to carry off the dust, that each operative shall have 250 square feet of air to breathe, and plenty of light. It has been claimed that not in 5 per cent of the shops do these desirable provisions prevail. A buffing wheel, making 2,500 revolutions per minute, has wrecked many constitutions. From it, as the polisher applies the metal, a cloud of dust arises, made of particles of cloth and metal, and that is what the operator breathes. Generally the windows are hermetically sealed. Often the walls and floors are covered with the accumulation of years. In the process of brightening silver-plated material there is given forth by the wheel a cloud of dust of which crocus is a large constituent, while from the plating room come fumes of nitric acid. In the process of polishing chandeliers there is much dust set free, which is composed of particles of brass, and permeates the air of the shop. Metal polishers often do not care to complain, because their wages are high. Here is a good field for activity among the factory inspectors, who should force employers to maintain proper conditions in the shops.(*)

* The Workers of the Nation, Vol. I, p. 57.

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More recent evidence has been presented in the published sickness and mortality experience of the Metal Polishers' Union, regarding which it has been stated that:

The treasury of this union, in spite of the fact that the men are steady and have no special temptations to excess, was found to be constantly exhausted. The reason is that the death claims eat up all the funds. An investigation of these claims showed that many of the men were dying from pulmonary tuberculosis. There were some deaths from accident, a few suicides, but the rest were all from pulmonary diseases—and pneumonia was very rare as compared with phthisis. The statistics for the last four years show that in 1903, 45 metal polishers died, of whom 43 succumbed to some lung trouble. In 1904 there were but 38 deaths among the metal polishers, of which only 3 were due to other causes than pulmonary disease. In 1905 there were 70 deaths among the metal polishers, 65 of which were due to some form of lung trouble. In New York City a local union having 170 men working exclusively on the precious metals, had 8 death claims in two years, 7 being due directly to tuberculosis, while 400 men employed in all the other branches of the same industry have had but 3 deaths from this cause in the same space of time.

A medical journal, commenting upon the above-quoted facts at the time of their publication, argued very pointedly to the effect that—

It would seem from these statistics that even the cleanest kinds of dust, without a trace of infectious material in them, may still prove a source of the greatest possible danger and be the indirect cause of tuberculosis. This has been known for some time, but so startling a confirmation of it is sure to emphasize the necessity for taking every precaution for the avoidance of dust. Even what might seem to be the most innocuous of dirt particles may, when inspired, constitute foci of irritation in which tubercle bacilli may readily find a favorable nidus for implantation and growth.

There are, unfortunately, no official vital statistics of polishers except the recorded mortality for Rhode Island for the period 1897 to 1906, which, however, includes only 42 deaths of polishers from all causes, but of this number 14, or 33.3 per cent, were from consumption. There were 4 deaths from pneumonia and 2 from asthma and bronchitis, a total of 20 deaths from diseases of the lungs and air passages, or 47.6 per cent of the mortality from all causes.

The Rhode Island statistics are fully confirmed by the recorded industrial insurance mortality data of polishers, which includes 279 deaths from all causes, of which 108, or 38.7 per cent, were deaths from consumption. Of the mortality of polishers from respiratory diseases other than consumption, 25 were from pneumonia, 5 from asthma and bronchitis, and 5 from other respiratory diseases. If the deaths from consumption and other respiratory diseases are combined, it is found that 51.2 per cent of the mortality of polishers was from

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diseases of the lungs and air passages. The excess in the mortality of polishers from consumption is clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG POLISHERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for polishers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of polishers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Polishers.	Males in registration area, 1900 to 1906.
15 to 24 years	48	22	45.8	27.8
25 to 34 years	75	42	56.0	31.3
35 to 44 years	68	29	42.6	23.6
45 to 54 years	48	11	22.9	15.0
55 to 64 years	19	4	21.1	8.1
65 years or over	21	.....	.....	2.7
Total	279	108	38.7	14.8

While according to this table the proportionate consumption mortality of polishers was excessive at all ages under 65, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 56 were from consumption, against a normally expected proportion of 31.3. The number of deaths of polishers included in the analysis is sufficient to warrant the conclusion that the mortality from consumption in this occupation is very considerably above the normal for the general population, but below the corresponding averages for grinders.

TOOL AND INSTRUMENT MAKERS.

The manufacture of tools and instruments includes a large number of grinders and polishers, but it is not possible to classify the occupations in detail. In the United States census statistics the industry includes cutlery manufacture, while in English mortality statistics the group comprehends tool, file, and saw makers, cutlers and scissors makers, and needle and pin makers. The statistics of 1900 for the United States return 26,997 males of known ages 15 or over employed in this industry as previously defined, and of this number 666, or 2.5 per cent, were 65 years of age or over. The proportion attaining to old age was, therefore, somewhat larger than expected, considering the high rate of mortality of grinders and polishers, and others employed in the manufacture of tools, instruments, etc. A special investigation into the sanitary conditions of this employment was made by the Massachusetts state board of health in 1907, and the

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report included a number of very valuable and suggestive references to conditions unfavorable to health and life, from which the following extracts are made:

From a sanitary point of view, the one important part of this industry is the reduction of the surface of the article in process of manufacture from the roughness of the original casting to the smoothness and brilliancy so necessary and desirable in the finished product. This involves successive treatment by wet grinding, dry grinding on emery and corundum wheels, and polishing with rouge on buffing wheels. Each of these processes, even that of wet grinding on large, coarse, and finer stones, causes to be cast into the air large amounts of fine dust, made up of very fine particles of steel and of the abrasive substance. In establishments properly equipped and conducted, provision is made to reduce the danger of this dust to a minimum by means of hoods connected with a system of exhaust fans or blowers. In spite of the precautions taken to protect their health, a very large proportion of grinders recklessly remove the hoods, and thus expose themselves unnecessarily to this especially dangerous form of dust. They assert that they prefer freedom of movement with dust to the protection afforded by hoods.

The workmen are not, as a class, long lived; indeed, the nature of the work is not compatible with longevity, and a person entering upon it in middle life is unlikely to follow it many years. Whatever the age at which the trade is taken up, a man in sound health who has followed it a few years is an acknowledged rarity. A study of the death returns of the city of Northampton, which is one of the centers of this industry, for the past twelve years, yields facts which can be interpreted in only one way. During this period tuberculosis is given as the cause of death in no less than 54.5 per cent of those whose occupation is indicated by "grinder" or "polisher," and in 45.4 per cent of those designated generally as "cutlers," and of the latter 36.4 died of pneumonia. Taken together, the "grinders," "polishers" and "cutlers" returns show that, during this period, diseases of the lungs were responsible for 72.73 per cent of their mortality. As was shown in the preliminary report on this industry, the tuberculosis death rate for cutlers in Northampton is four times as high as that for the entire adult male population.

A serious problem in the cutlery and tool industry is how to secure effective ventilation, and many of the factories and workshops inspected were found to be seriously defective in this respect. A large proportion of the workmen, including many young boys, are exposed to considerable dust, chiefly, of course, in the grinding and polishing departments. While much has been done to improve the sanitary conditions by artificial ventilation, there has been but a very languid cooperation on the part of the operatives themselves, and many, in fact, are interfering with the arrangements made for their protection to the extent of removing the hoods and exhaust pipes installed for the purpose of removing the dust.

The United States census vital statistics do not include the m-
ity of tool and instrument makers, and the only official s-

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those of the state board of health of Rhode Island. During the decade 1897 to 1906 there were recorded in Rhode Island 44 deaths of tool makers from all causes, and of this number 9, or 20.5 per cent, were from consumption, and 5, or 11.4 per cent, from other respiratory diseases. The total mortality from diseases of the lungs and air passages was 14, or 31.9 per cent, against an expected percentage of 30.3 for all occupied males in Rhode Island. Fortunately there are more conclusive data regarding this occupation. The most valuable official statistics are those for England and Wales, published at decennial intervals in the supplements to the reports of the registrar-general of births, marriages, and deaths. Only two comparatively recent investigations are here referred to. The first of these, for the three years ending with 1892, included 2,529 deaths from all causes, of which 505, or 20 per cent, were from consumption. Of diseases of the respiratory system other than consumption, 384 deaths were from bronchitis, 286 from pneumonia, and 78 from other diseases of this group, a total of 748, or 29.6 per cent, of the mortality from all causes. Combining the mortality from consumption and other respiratory diseases, it is found that 49.5 per cent of the deaths of tool and instrument makers, as previously defined, were from diseases of the lungs and air passages.

The most recent English mortality statistics of tool and cutlery manufacture are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

In the occupation as a whole the mortality at ages under 25 is below the standard for occupied and retired males; but among file makers the death rate at these ages exceeds the standard. Beyond age 25 the mortality in the whole occupation, as well as among cutlers and file makers, considerably exceeds the standard. At ages 45 to 65 years the death rate among cutlers is 72 per cent and that of file makers is 84 per cent above the average. Within the main working period of life the comparative mortality figure for the whole occupation is 1,315, or 31 per cent, above the standard. The mortality from lead poisoning is nine times and that from phthisis is nearly double the standard, and these workers suffer excessively from nervous, circulatory, respiratory, and urinary diseases. On the other hand, the mortality from alcoholism and liver disease and from accident is about half the average. Among cutlers and file makers the comparative mortality figures considerably exceed the average for the entire occupation, the figure for the former being 56 per cent above the standard for all occupied and retired males, while that for the latter is 69 per cent in excess. Indeed, these two occupations appear to be the most unhealthy in the whole group of workers in metal. It should be mentioned in this place that the occupation of file maker is one that is specially liable to lead poisoning, the mortality figure for plumbism being no less than 56, whilst among all occupied and retired males the mortality is represented by unity.

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File makers experience more than twice the average mortality from nervous diseases and nearly four times the average from Bright's disease, but cutlers experience comparatively little excess of mortality from either of these causes. In both industries the mortality from phthisis is enormous, the figure for cutlers being nearly three times and that for file makers more than twice the standard, and in both occupations the mortality from respiratory diseases approaches double the standard. Both these workers, however, experience a low mortality from influenza, from alcoholism and liver disease, and from accident, while among file makers the mortality from cancer is also less than normal.(a)

The English occupation mortality statistics for men employed at tool, instrument, and cutlery making are quite conclusive of the more or less unfavorable effects of this industry on health. In the table which follows a comparison is made of the mortality from all causes among men in this group with occupied males generally, and the result is decidedly suggestive of conditions in this trade more or less unfavorable to life and health, but in particular at ages 45 or over, when the general mortality of this class exceeds the general average by from 8.24 to 12.26 per 1,000.

MORTALITY FROM ALL CAUSES AMONG TOOL, INSTRUMENT, AND CUTLERY MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for tool, instrument, and cutlery makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.09	− 0.35	86
20 to 24 years	4.41	3.32	− 1.09	75
25 to 34 years	6.01	6.32	+ .31	105
35 to 44 years	10.22	13.65	+ 3.43	134
45 to 54 years	17.73	25.97	+ 8.24	146
55 to 64 years	31.01	42.05	+11.04	136
65 years or over	88.39	100.65	+12.26	114

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of tool, instrument, and cutlery makers from consumption and other respiratory diseases is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that at ages 20 or over the mortality

(a) Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, pp. lxix, lxx.

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from consumption is excessive among tool, instrument, and cutlery makers, but decidedly so at ages 35 to 64, inclusive. The table further shows that the mortality from other respiratory diseases is excessive among men in this class, but decidedly so at ages 45 or over, reaching the highest rate at ages 65 or over, when the excess is 7.69 per 1,000. The two tables, derived from English experience, fully confirm the previous conclusion that the mortality of tool, instrument, and cutlery makers is excessive when comparison is made with the normal mortality of occupied males generally and that this excess is largely because of a high degree of consumption frequency, particularly at ages 25 to 64, when the excess is from 0.91 to 4.09 per 1,000. The table which follows requires no further comment and is otherwise self-explanatory:

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG TOOL, INSTRUMENT, AND CUTLERY MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for tool, instrument, and cutlery makers.			Death rate per 1,000 for all occupied males.	Death rate for tool, instrument, and cutlery makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.54	0.17	−0.37	31	0.24	0.23	−0.01	96
20 to 24 years.....	1.55	1.57	+ .02	101	.48	.56	+ .08	117
25 to 34 years.....	2.03	2.94	+ .91	145	.77	1.14	+ .37	148
35 to 44 years.....	2.74	5.90	+3.16	215	1.66	2.01	+ .35	121
45 to 54 years.....	3.04	7.13	+4.09	235	3.32	5.40	+2.08	163
55 to 64 years.....	2.16	5.26	+3.10	244	6.54	10.42	+3.88	159
65 years or over...	1.11	1.97	+ .86	177	17.77	25.46	+7.69	143

The recorded industrial insurance mortality statistics of tool and instrument makers include 303 deaths from all causes, of which 101, or 33.3 per cent, were from consumption. Of the mortality of tool and instrument makers from other respiratory diseases, 25 were from pneumonia, 9 from asthma and bronchitis, and 5 from less frequent respiratory diseases. If the deaths from consumption and other respiratory diseases are combined, it is found that 46.3 per cent of the mortality of tool and instrument makers was from diseases of the lungs and air passages. The excess in the consumption mortality of tool and instrument makers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality of

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tool and instrument makers was excessive at all ages, the excess was most pronounced at 25 to 34, when out of every 100 deaths from all causes 59.3 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of tool and instrument makers in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG TOOL AND INSTRUMENT MAKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for tool and instrument makers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of tool and instrument makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Tool and instrument makers.	Males in registration area, 1900 to 1906.
15 to 24 years	40	13	32.5	27.8
25 to 34 years	59	35	59.3	31.3
35 to 44 years	68	24	35.3	23.6
45 to 54 years	56	21	37.5	15.0
55 to 64 years	32	4	12.5	8.1
65 years or over	48	4	8.3	2.7
Total	303	101	33.3	14.8

The preceding observations and statistical data fully confirm the conclusion that tool and instrument makers, including under this term many similar employments, but in particular the manufacture of cutlery inclusive of grinding and polishing, represent a trade subject to decidedly health-injurious circumstances which are responsible for the comparatively high degree of consumption frequency disclosed by both the general vital statistics of the occupation and the observed mortality of this class in industrial insurance experience.

JEWELERS.

The manufacture of jewelry in all its branches involves a large variety of manipulations, including the melting and refining of small quantities of the precious metals, and the handling, shaping, cutting, and polishing of precious stones. An important part of the industry is engraving and die cutting, which, however, for the present purpose, is separately considered as a well-defined occupation, and although often included with jewelers, it is equally often included with printers and compositors. Most of the articles made by jewelers are of small dimensions, such as chains, rings, brooches, pins, and buckles, which require painstaking care in handling and continuous eye-straining attention in shaping and polishing. Aside from the

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use of gold and silver, many other metals and mineral substances are employed, such as jet, coral, tortoise, bone, ivory, etc. Zinc is also extensively used as an alloy and for coloring purposes. The gems require to be cut with extreme care, and the work of the diamond polisher and lapidary constitutes, next to the gold and silver smith, important separate branches of the trade. The manufacture of artificial gems, made of a paste, chiefly of a vitreous substance prepared from rocks and crystals or flint powder, subsequently treated with nitric acid with lead and borax as a flux, forms another important subdivision of the industry.

The work of the jeweler is naturally an indoor occupation, involving a stooping position, much like that of the engraver. The workshops are generally small and the ventilation is usually poor. The dust generated in the process of hammering, cutting, shaping, grinding, polishing, etc., is considerable, but very minute, and not easily observed. The dust accumulations are preserved and sold to refining plants, for remelting and the recovery of precious substances. The health problem is complicated by the universal use of blow-pipe apparatus and of gas for heating purposes. In large factories the use of machinery is increasing, but chiefly in connection with the manufacture of imitation jewelry and stones.

The unhygienic condition of many jewelry workshops and the general effect of this employment on health were discussed at some length in an early treatise by Thackrah, from which is quoted the following:

The jewelers' workrooms are generally crowded, and the atmosphere consequently fouled by respiration, animal effluvia, and the smoke of lamps, as well as by the specific exhalations of the manufacture. Its temperature is generally raised, and in summer the heat is excessive. The labor is light, but the confinement to a leaning posture, with the head much depressed, and the elbows generally fixed to the sides of the trunk, for ten, fourteen, or sixteen hours a day, is irksome and injurious. Intemperance is general, and dram drinking especially prevalent. The disorders of which jewelers principally complain are pains and soreness of the chest, disorders of the stomach and liver, and plethoric affections of the head. They enter the employ about 13 or 14 years of age and are obliged to abandon it generally at 45 to 50.(a)

Thackrah continues that "an old jeweler is seldom to be found, and leaving work, they seem to leave the world as well." That this rather unfavorable view regarding the health conditions in the jewelers' trade is not exaggerated is made evident by the fairly trustworthy vital statistics of the trade. The English mortality data of jewelers and allied occupations for the three years ending with 1902, include 2,823 deaths from all causes, of which 598, or 21.2 per cent, were from

a Effects of Arts, Trades, and Professions on Health and Longevity. C. Turner Thackrah, London, 1832, p. 115.

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consumption. In addition to a high mortality from consumption there were 164 deaths from bronchitis and 247 from other respiratory diseases, a total of 1,009 deaths, or 35.7 per cent, from diseases of the lungs and air passages in the mortality from all causes.(a)

In Rhode Island the jewelry industry has attained to very large proportions, constituting one of the most important industries in that State. During the ten years ending with 1906 the number of deaths of jewelers recorded was 557 from all causes, and of this number 173, or 31.1 per cent, were from consumption, and 51, or 9.2 per cent, from other respiratory diseases; of the total mortality, therefore, 224 deaths, or 40.3 per cent, were from diseases of the lungs and air passages. No corresponding information is available for other States, but in Massachusetts an investigation was made in 1907 into the hygiene of this trade under the direction of the state board of health, the results of which, however, were rather inconclusive. The opinion arrived at regarding the relation of this employment to health was a rather favorable one, it being stated that in general the appearance of the employee "is healthy and many who have followed the industry for twenty or more years speak of the work as being entirely consistent with good health." This favorable opinion, however, may be called into question in view of the very high proportionate mortality from consumption among jewelers and others employed in the jewelers' trade. In amplification of the previous reference to the Rhode Island statistics, it may be stated that during the half century ending with 1902, 1,252 deaths of jewelers were recorded, of which 480, or 38.3 per cent, were from consumption. There were also 80 deaths from pneumonia, 18 from asthma and bronchitis, or a total of 578 deaths, or 46.2 per cent, from diseases of the lungs and air passages in the mortality from all causes.

The recorded mortality of jewelers in industrial insurance experience includes 403 deaths from all causes, of which 113, or 28 per cent, were from consumption. Of the mortality of jewelers from other respiratory diseases, 37 were from pneumonia, 10 from asthma and bronchitis, and 2 from other respiratory diseases. The deaths from consumption and other respiratory diseases combined show that 40.2 per cent of the mortality of jewelers was from diseases of the lungs and air passages. The excess in the consumption mortality of jewelers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality of jewelers was excessive at all ages, the excess was most pronounced at 25 to 34, when out of every

(a) The English data include watch and clock makers, makers of scientific instruments, and other more or less closely allied trades. For this reason the English statistics are not strictly comparable with other data for jewelers and are, not, therefore, presented here in tabular form.

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100 deaths from all causes 59.5 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of jewelers in detail is set forth in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG JEWELERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for jewelers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of jewelers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Jewelers.	Males in registration area, 1900 to 1906
15 to 24 years	60	24	40.0	27.8
25 to 34 years	74	44	59.5	31.3
35 to 44 years	50	22	44.0	23.6
45 to 54 years	59	13	22.0	15.0
55 to 64 years	77	7	9.1	8.1
65 years or over	83	3	3.6	2.7
Total	403	113	28.0	14.8

The preceding observations and statistical data confirm the conclusion that jewelers as a class are subject to an excessive mortality from consumption, but in particular at ages 25 to 34, and that this excess is in a large measure the result of health-injurious circumstances connected with the employment.

MANUFACTURE OF GOLD LEAF.

The work of the gold leaf beater is nearly all hand work, excepting in the operation of the rolling machines. The trade is carried on to-day in practically the same manner as in ancient times. The weight of the hammer used will average 18 pounds, which is more than that of the hammer used by the average blacksmith. Girls, as a rule, are employed in connection with the less arduous operations and the final packing of the gold leaves in boxes and packages. The tissue used in connection with this process is coated with red chalk, the dust of which, of course, enters into the atmosphere of the rooms, usually badly ventilated. One of the chief difficulties in connection with ventilation is the fact that the slightest draft of air will carry the scrap of gold leaf from one anvil to another and make packing operations difficult or impossible. Evidence that the fine particles of gold enter the atmosphere is found in the fact that workmen with beards turn in less waste gold than clean-shaven workmen, and they are now required to wash themselves before leaving the shop, the water being filtered for the recovery of the metal contained therein.

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Thackrah, writing in 1832, held that gold-beating must be considered a distinct employment, aside from the metal trade generally. Gold-beaters are about half the day engaged in beating the metal with heavy hammers and the rest in spreading the gold leaf on paper. By this change in employment the process affords an excellent alternation of labor and comparative rest. In his opinion, the men were not exposed to health-injurious conditions and were generally healthy and robust.(a) It is difficult, however, to accept these conclusions in their entirety. The work of the gold-beater is carried on in rooms the air of which is more or less contaminated and where proper provision for ventilation is extremely difficult, if not impossible. The work is commenced at rather early ages and quite a considerable proportion of young persons are employed. Whether gold dust is itself injurious has never been scientifically determined, but it is quite probable that it is less injurious than other metallic dust.

There are no general vital statistics for this occupation other than the published industrial insurance mortality experience data and these are limited to only 25 deaths from all causes. Of this number 7 were from consumption and 5 from pneumonia and other respiratory diseases. For all ages 28 per cent of the deaths were from consumption, and at 25 to 34 the proportionate mortality from this disease was 50 per cent. The very limited number of observed cases does not warrant a final conclusion, but the statistical evidence would seem to confirm the view that the consumption mortality in this occupation is above the average. The sanitary problems in this industry are complicated by the fact that the work is, as a rule, carried on in small shops, to which it is most difficult to apply rational principles of factory legislation.

BRASS WORKERS.

Brass workers, exclusive of brass polishers and buffers, who have been separately considered, constitute a large group of widely diversified and often quite unlike employments. Brass casting, founding, and molding are arduous occupations exposing to the inhalation of considerable quantities of mineral dust more or less mixed with metallic ingredients. Whether brass dust, as such, is more injurious than the dust of iron and steel, for illustration, has not been determined. In the evidence submitted to the Departmental Committee on Compensation for Industrial Diseases by the National Society of Amalgamated Brass Workers,(b) including about 7,000 members, it was

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a Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, p. 48.

b Minutes of Evidence, Departmental Committee on Compensation for Industrial Diseases, 1906, p. 75 et seq.

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stated that about 2,000 of these were engaged in casting. The trade was said to be divided into pattern making, chasing, casting, finishing, burnishing, polishing, and putting together. The corresponding classification of the trade in the United States follows practically similar lines.(a) Of the groups mentioned, casting and founding were considered the most injurious to health. Burnishing was held to be less injurious than polishing, but the so-called putting together was stated to be decidedly unhealthful on account of the use of white lead. Evidently, in so diversified a trade the degree of dust exposure must vary widely, and at best the degree of injury can only be measured approximately upon the basis of more or less indefinite mortality data. The exposure of brass workers to dust inhalation is only one of a number of specific factors in the trade decidedly injurious to health and life, and of these mention may be made of the exposure to fumes and vapors generated in the smelting processes. Brass founder's ague is a well-defined occupation disease, the symptoms of which are tightness of the chest with indefinite nervous sensation, followed by fever and previous sweating. Zinc and other fumes inhaled are the chief causes of this ailment, and it is quite probable that the lung injury resulting from the inhalation of fine particles of metallic dust is a material contributory cause in brass founder's ague. Arlidge, in summing up the views of other authorities on brass workers' disease, points out that—

Besides brass founding, there are other departments in the brass-working business that are damaging to health; and chiefly so by reason of the dust produced. These branches are brass casting, turning, filing, and polishing. The soft nature of brass is opposed to the development of very fine and acuminated particles, and its weight to its rising very freely and to its diffusion in the air. Nevertheless, those turning and filing it show clearly, by their clothes and hair, that it is largely dispersed; the latter getting green, as happens with brass founders. The inhalation of brass dust operates in similar fashion to that seen in connection with other metallic dusts, provoking bronchial catarrh, which advances to bronchitis and ends in fibrosis. It is reported by some writers that phthisis is unusually prevalent, but no reliable statistics are available to support this statement.

More recent investigations in England fully confirm these earlier conclusions. In 1894 a departmental committee was appointed by the secretary of state to report upon the conditions of work as affecting the health of operatives in the manufacture of brass and kindred amalgams. In its report, which was published in 1896, the committee stated as the result of its investigation, first, that brass workers as a class were extensively liable to diseases of the respiratory or-

(a) The number of brass workers in the United States in 1900 was 26,760, but of this number 890 were women..

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gans, and, second, that brass founder's ague, so called, was found to result from the inhalation of fumes given off by the molten brass at the time of pouring, but in a less degree it was attributed to the contamination of the workers' food by the fumes, and that this danger was in proportion to the amount of zinc used in the alloy. The subject was also reported upon in much detail in the Report of the Chief Inspector of Factories and Workshops for the year 1905. From this report the following suggestive extracts are made:

Altogether some 500 brass workers were examined, and in addition to the filling in by each one of them of the appended form, note was made of the height, weight, chest measurement, and strength of grasp; the heart, lungs, gums, and teeth were, whenever practicable, examined, and the condition as to anemia, paresis, general health, and prevalence of brass founder's ague was determined.

The result of the replies of 216 casters and 199 polishers and others to the question, Do you consider that your health has been in any way injured by working in brass? was that 22.7 per cent of the casters and 11.6 per cent of the polishers and others said they had suffered. This is perhaps the strongest evidence obtained in the inquiry that the casters are exposed to more trying conditions of work than are other brass workers.

The nature of the injury was, as a rule, only very vaguely expressed; in the case of the casters it was nearly always either "fumes" or "sulphur," and in that of the polishers "dust." In one casting shop, where 19 strip casters were examined, of whom 9 said they suffered, illness or discomfort was attributed in some cases to resin fumes in addition to those ordinarily present. Among the casters there were indications that the older the workers were, and also that the earlier the age of commencement of work, the more did they say they had suffered, facts which could not be observed in the case of the polishers.

In 8 casters (3.9 per cent) definite physical signs in the lungs were found, and similarly in 3 (1.5 per cent) of the polishers and others. In two of the casters these pointed to chronic phthisis, while the remainder pointed to bronchial catarrh. I am not inclined to draw any conclusions from these facts, because (1) the number of observations is too small, (2) the examination in some of the factories was carried out under great disadvantages, owing to the impossibility of securing a quiet room, and (3) it is well known that persons who are the subjects of disease of the lungs in any marked degree are not likely to be found at work.

Very strong evidence of the beneficial effect of good exhaust ventilation in connection with all kinds of polishing operations, and indirectly of the lowered state of health from the nonremoval of the dust, was obtained at one factory. Here the opinion of the occupier was that the installation had paid for itself over and over again in the better work which was turned out by the men, and by the improved tone among them resulting from the absence of the obnoxious dust. The remarks of the polishers bore this out. One said, "Worked for eighteen years before the fan was put in, when the dust used to

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make him feel sick, but it is not so now." A second said, "I prefer this shop to any other." A third, "I never worked in a cleaner shop;" and a fourth, "The fan is a great improvement."

A large amount of fluff, sand, and lime is given off in the process of polishing with calico mops. It is not, therefore, difficult to understand (even although actual injury to health from it may be hard to prove) that removal of the dust is welcomed as tending to make the work healthier. A sample of dust taken from under a polishing bob was submitted to Doctor Thorpe, who reported: "This sample contains a large proportion of fiber, the loss on ignition amounting to 37.6 per cent. The metallic portion of the residue—copper, zinc, lead, and iron—amounts to 10.56 per cent of the total sample. The lead present equals 0.22 per cent of the total sample, or 2.1 per cent of the above metallic constituents, or, excluding the iron, 2.33 per cent. Microscopically brass dust collected from near an emery wheel showed all the appearances of an injurious metallic dust—fine particles with irregular jagged edges."

Oliver concludes his observations regarding the hygiene of this employment with the following statement:

The necessity of personal cleanliness on the part of workmen and of well-ventilated workshops is apparent. Means ought to be provided for a ready escape of the fumes and for the removal of dust. The workshops ought to be cleaned at least once a year and the walls whitewashed. Hot and cold water should be provided for the men to wash in. The workmen themselves have found out by experience that milk is both a prophylactic or preventive as well as a curative agent. While the use of respirators seems called for, the men can not work well in them. Women and persons under 18 years of age are not allowed to work in the casting shop.

The most recent English mortality statistics of brass workers are for the three years ending with 1902, referred to in the report of the registrar-general in part, as follows:

The mortality of these workers is somewhat below the standard at ages 15 to 20 and 25 to 35 years, but above the standard at every other age group. In the main working period of life their comparative mortality figure is 1,154, or 15 per cent above the average; the greatest excess of mortality occurring under the head of phthisis, the figure for which disease is above the average by 45 per cent. The mortality from diseases of the nervous, circulatory, respiratory, and urinary systems as well as from suicide is also above the average. These workers are only slightly liable to fatal influenza, and their mortality from alcoholism and liver disease is also low. They likewise suffer less than the average from fatal accident.(a)

The English occupation mortality statistics for brass workers are quite conclusive of the more or less unfavorable effects of this industry on health. In the table which follows a comparison is made of

(a) Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxxv.

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the mortality from all causes of men in this group with occupied males generally, and the result is quite suggestive of conditions in this trade more or less unfavorable to life and health, but in particular at ages 35 to 64, when the general mortality of this class exceeds the general average by from 3.17 to 5.59 per 1,000.

MORTALITY FROM ALL CAUSES OF **BRASS WORKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for brass workers.		
		Rate per 1,000.	Greater(+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.22	−0.22	91
20 to 24 years	4.41	5.13	+ .72	116
25 to 34 years	6.01	5.86	− .15	98
35 to 44 years	10.22	12.79	+2.57	125
45 to 54 years	17.73	20.90	+3.17	118
55 to 64 years	31.01	36.60	+5.59	118
65 years or over	88.39	83.78	−4.61	95

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of brass workers from consumption and respiratory diseases other than consumption is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that at ages 20 to 64, inclusive, the mortality of brass workers from consumption is excessive by from 0.42 to 1.79 per 1,000, the excess being greatest at ages 35 to 44. The table further shows that the mortality from respiratory diseases other than consumption is excessive among men in this class, but decidedly so at ages 55 and over, when the excess is from 1.29 to 2.88 per 1,000. The two tables derived from English experience fully confirm the previous conclusion that the mortality of brass workers is excessive when comparison is made with the normal mortality of occupied males generally, and that this excess is largely because of the high degree of consumption frequency, particularly at ages 25 to 54. The table which follows requires no further comment, and is otherwise self-explanatory.

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MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG BRASS WORKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for brass workers.			Death rate per 1,000 for all occupied males.	Death rate for brass workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.49	−0.05	91	0.24	0.24	.....	100
20 to 24 years	1.55	2.17	+ .62	140	.48	.52	+0.04	108
25 to 34 years	2.03	2.93	+ .90	144	.77	.60	− .17	78
35 to 44 years	2.74	4.53	+1.79	165	1.66	2.05	+ .39	123
45 to 54 years	3.04	4.61	+1.57	152	3.32	3.94	+ .62	119
55 to 64 years	2.16	2.58	+ .42	119	6.54	9.42	+2.88	144
65 years or over	1.11	.44	− .67	40	17.77	19.06	+1.29	107

The recorded mortality of brass workers in industrial insurance experience includes 414 deaths from all causes, of which 161, or 38.9 per cent, were from consumption. Of the mortality of brass workers from respiratory diseases, other than consumption, 36 were from pneumonia, 3 from asthma and bronchitis, and 12 from less frequent respiratory diseases. If the deaths from consumption and other respiratory diseases are combined, 51.2 per cent of the mortality of brass workers was from diseases of the lungs and air passages. The excess in the consumption mortality of brass workers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 15 to 24, when out of every 100 deaths from all causes 59.1 were from consumption, against a normal expected proportion of 27.8. The analysis of the consumption mortality of brass workers in detail is set forth in the following table.

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PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG BRASS WORKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for brass workers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of brass workers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Brass workers.	Males in registration area, 1900 to 1906.
15 to 24 years	66	39	59.1	27.8
25 to 34 years	112	56	50.0	31.3
35 to 44 years	91	41	45.1	23.6
45 to 54 years	58	14	24.1	15.0
55 to 64 years	54	11	20.4	8.1
65 years or over	33	.....	.....	2.7
Total	414	161	38.9	14.8

The preceding observations and statistical data fully confirm the conclusion that brass workers as a class are subject to decidedly health-injurious circumstances connected with the employment, and resulting in a comparatively high degree of consumption frequency and a death rate from respiratory diseases in excess of the normal at ages 35 or over.

PRINTERS.

The employment of printers differs in many essentials from most of the other occupations considered in this discussion, since it is homogeneous and well-defined and common throughout the country. While in many of the modern printing establishments the conditions favoring health and life, with special reference to ventilation and light, are probably satisfactory, in the smaller workshops the sanitary conditions, as a rule, are decidedly to the contrary, and predispose to tuberculosis. Thackrah early called attention to the diseases of printers, and in his opinion "few appear to enjoy good health." Consumption, according to this writer, was frequent, but apparently caused rather by the confinement or indoor employment than from direct injury to the respiratory organs. The trade is one which has received a considerable amount of attention because of its recognized unhygienic features, and, in addition to the general data upon this subject, the mortality experience of various typographic associations has been carefully investigated. As Oliver points out, "Printing houses should be so constructed that free currents of air can get to them, and not, as is so frequently the case, shut in by other buildings."

But such construction is even to-day the exception rather than the rule. Considering that, as a class, printers probably rank above the average mechanics in intelligence and earnings, it is difficult to un-

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derstand why they should so persistently in the past have neglected the important problem of workshop hygiene. The successful effort to secure to the members of the craft in illness or old age a home in the mountain region of the West emphasizes what could be done by concentrated effort in other and even more important directions. In the historical sketch of the Union Printers' Home, at Colorado Springs, it is, in fact, pointed out that the place was selected for the location of the home primarily because of the special liability of printers to all forms of lung and throat diseases, and in explanation of the subsequent necessity for a hospital annex the statement is repeated that "consumption is one of the diseases to which the printer is especially liable."

The English vital statistics of printers for 1890 to 1892 are quite conclusive. Out of 2,677 deaths of printers from all causes, 917 were from phthisis, 218 from bronchitis, 186 from pneumonia, and 50 from other diseases of the respiratory system. In every 100 deaths from all causes there occurred, therefore, 51.2 deaths from diseases of the lungs and air passages. In comparing the mortality rates of printers with occupied males generally the health-injurious effects of the occupation, at even very early ages, become very readily apparent. At ages 15 to 19 the rate for occupied males generally was 2.55 against 3.24 for printers; at 20 to 24 the rates were, respectively, 5.07 and 6.61; at 25 to 34, 7.29 and 9.10; at 35 to 44, 12.43 and 14.40; at 45 to 54, 20.66 and 21.56; at 55 to 64, 36.66 and 43.39; and finally, at ages 65 or over, 102.32 and 102.61. This comparison proves conclusively that the excess in the mortality falls very largely upon ages under 35, and at these ages more than half of the mortality from all causes is from diseases of the lungs or air passages, or primarily from consumption.

Tatham, in commenting upon the excessive mortality of printers, as disclosed by an analysis of the English mortality data, remarks that "like bookbinders, printers die very rapidly from phthisis, and probably for a similar reason, namely, because of the excessively unhealthful conditions under which their work is carried on."[a] Tatham calls attention, however, to the decline in the mortality of printers during the course of the last twenty years, due among other causes to the decrease in the deaths from lead poisoning, which had fallen to one-half of the earlier figure. The frequency of phthisis among English printers had decreased during the decade by one-sixth of the former rate.

In the occupation mortality statistics of the Twelfth Census, printers are grouped with compositors and pressmen, which is to be regretted since there are certain important differences in the disease liability of

[a] Dangerous Trades, p. 151.

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these allied employments which are sufficiently distinct to warrant separate consideration, at least in the case of pressmen, although the number of the latter is comparatively small. The total number of persons included in this group in the registration States, aged 15 or over, according to the census, was 54,374, but of this number only 818, or 1.5 per cent, had attained to the age of 65 or over.(a) This rather surprising result is confirmed by the statistics of the New Jersey bureau of labor for 1891, according to which out of 462 printers only 2 had attained to the age of 60 or over. The census mortality statistics of this group of printers, or as stated, compositors, printers, and pressmen, are of some value though not entirely conclusive on account of probable defects in the census enumeration.

MORTALITY FROM ALL CAUSES AMONG COMPOSITORS, PRINTERS, AND PRESSMEN, COMPARED WITH THAT OF THE MANUFACTURING AND MECHANICAL CLASS AND THE MERCANTILE AND TRADING CLASS IN THE REGISTRATION STATES, 1900, BY AGE GROUPS.

[From report of the Bureau of the Census on Vital Statistics, 1900.]

Age at death.	Death rate per 1,000 among—		
	Compositors, printers, and pressmen.	The manufacturing and mechanical class.	The mercantile and trading class.
15 to 24 years	5.05	4.43	2.60
25 to 44 years	12.29	8.35	6.72
45 to 64 years	20.01	20.16	19.91
65 years or over	108.80	105.43	93.79

According to this table the death rate of printers at ages 15 to 24 was 5.05 per 1,000, compared with 4.43 for men in the mechanical and manufacturing class, and only 2.60 for the mercantile and trading class. At ages 25 to 44 the rate was 12.29 for printers, but only 8.35 and 6.72, respectively, for the other two selected groups of occupations. At ages 45 or over the differences in the mortality of printers compared with other occupations were very slight, due in all probability to the fact that on the one hand most of those at all liable to consumption had died, and that on the other many of the impaired in health had left the trade. In addition, there is also the factor of a possible defect in the census enumeration.

Every investigation which has been made into the mortality rate of printers has confirmed these startling facts of health-injurious circumstances apparently inherent in the trade. In Rhode Island, out of 81 deaths of printers recorded during the ten-year period ending with 1906, 21, or 25.9 per cent, were from consumption and 15, or 18.5 per cent, from other respiratory diseases. At the forty-sixth session of the International Typographical Union, held at Milwaukee, Wis., in 1900, a statistical summary was submitted showing that out of 419 deaths of printers, 192, or 45.8 per cent, had been deaths from

a Report of the Bureau of the Census on Vital Statistics, 1900, p. cclxxxii.

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diseases of the lungs or air passages, including under this term bronchitis, asthma, pulmonary consumption, pneumonia, and all other respiratory diseases. Of the 411 printers whose ages at death were known, 44, or 10.7 per cent, died at the age of 65 or over, while the average age at death was only 41.25 years, compared with 52.2 years for all males aged 15 or over in the registration area of the United States in 1900.

A thorough and extended investigation into the sanitary conditions of the printing trade was published as part of the report of the New York state bureau of labor statistics in 1906, prepared by Mr. George A. Stevens, statistician. This investigation included the entire mortality of the International Typographical Union for the five years ending with 1905, or 2,498 deaths, representing a mean death rate of 12.63 per 1,000. The rate was highest among the printers of New York City, or 16.32 per 1,000, and lowest in Chicago, or 10.12 per 1,000. The average age at death for all printers was not quite 45 years. The disease most frequent and severe among compositors was found to be tuberculosis of the lungs. The average age at death of compositors dying from tuberculosis was only 36.33 years. Out of 2,498 deaths from all causes, 660, or 26.4 per cent, were from tuberculosis, equivalent to an annual mean death rate of 3.34 per 1,000. Pneumonia caused 258 deaths, or 10.3 per cent of the deaths from all causes, equivalent to an annual mean death rate of 1.30 per 1,000. In commenting upon the high degree of consumption frequency the report points out that "scarcely any other occupation furnishes so large a quota of victims from consumption. The domestic life of printers is parallel to that of other artisans in equal financial circumstances. They are fairly compensated for their labor, thus enabling them to have homes as healthful as those procured by the best-paid workmen in any community. Neither can it be said that compositors are ill nourished and therefore rendered more susceptible to the tubercle bacilli. The determining cause of their susceptibility to the harmful process of the great white plague lies in a different direction—neglect of sanitary precautions in composing rooms."(a)

Of the mortality at known ages, from all causes, 18.9 per cent were deaths at 60 years of age or over. Of the 464 deaths in this group, 321 occurred between the ages of 60 and 69, 122 between 70 and 79, 19 between 80 and 89, 1 at age 90, and 1 at age 96.

The statistical data of the mortality rate among printers for the United States are fully confirmed by the corresponding statistics for German printers, which were published in a small treatise on the hygiene of the printing trade by Doctor Lewitt, of Berlin, in 1899. According to this authority, out of 1,390 recorded deaths of printers,

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a Report of the New York Bureau of Labor Statistics, 1906, pp. cxxi and cxxii.

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798, or nearly 61 per cent, were of diseases of the lungs and air passages, including 630 deaths from consumption. Of the total number, 243 had attained to the age of 60 or over, or 17.5 per cent of the mortality at known ages. The suggestions made by this writer regarding the prevention of tuberculosis and other diseases in the printing trade are eminently practical and feasible in most of the workshops in which printers are employed.

The most recent English mortality statistics of printers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

The death rates of printers were above the standard for occupied and retired males at all ages up to 35 years, but above that age they were below the standard. Within the main working period of life the comparative mortality figure of printers is 994, which practically corresponds to the standard; they show a slightly excessive mortality from influenza, nervous diseases, and Bright's disease; and their mortality from phthisis exceeds the standard by 60 per cent. On the other hand their mortality from circulatory and respiratory diseases is considerably below the average, and they appear to be subject to small risk from fatal accident, and to be but little addicted to alcoholism and suicide.

Since 1880–1882 there has been a continuous decline in mortality from phthisis, liver disease, and accident. It is also worthy of notice that the mortality from lead poisoning is now only one-fifth part as high as it was twenty years ago. From the other causes shown in the table the mortality in this occupation has fluctuated considerably.

The English occupation mortality statistics for printers are quite conclusive of the unfavorable effects of this occupation on health. In the table which follows the mortality from all causes among men in this employment is compared with that of occupied males generally, and the result is decidedly suggestive of conditions in this trade more or less unfavorable to life and health but in particular at the early ages, or 15 to 34, when the excess in mortality is from 1.62 to 0.45 per 1,000. This table is deserving of particular consideration in that it emphasizes the health-destructive circumstances of this employment at a very early period of life. Those who survive to age 35 or over do not apparently experience a decidedly unfavorable mortality in comparison with other occupations, and in this respect the English statistics are confirmed by the United States census statistics previously quoted. While the actual excess in the mortality of printers at ages 20 to 24 is only 1.62 per 1,000, this excess is equivalent to nearly 50 per cent of the normal mortality at this period of life.

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MORTALITY FROM ALL CAUSES AMONG PRINTERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902. BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for printers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	3.19	+0.75	131
20 to 24 years	4.41	6.03	+1.62	137
25 to 34 years	6.01	6.46	+.45	107
35 to 44 years	10.22	10.19	−.03	100
45 to 54 years	17.73	17.76	+.03	100
55 to 64 years	31.01	30.76	−.75	99
65 years or over	88.39	87.61	−.78	99

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of printers from consumption and other diseases of the respiratory system is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that at all ages the mortality of printers from consumption is excessive by from 0.49 to 2.11 per 1,000. The excess is most marked at ages 35 to 44, but the difference is a material one at all ages 20 to 64 inclusive. The corresponding mortality from other respiratory diseases among printers was slightly excessive at ages under 20 and comparatively high at ages 65 or over, but below the average at ages 20 to 64, inclusive. Apparently the employment does not predispose seriously to respiratory diseases except such as assume the pulmonary form of true consumption of a rapidly developing type most destructive to young printers at ages under 45. The table which follows requires no further comment and is otherwise self-explanatory.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG PRINTERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for printers.			Death rate per 1,000 for all occupied males.	Death rate for printers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	1.03	+0.49	191	0.24	0.36	+0.12	150
20 to 24 years	1.55	3.41	+1.86	220	.48	.37	−.11	77
25 to 34 years	2.03	3.65	+1.62	180	.77	.55	−.22	71
35 to 44 years	2.74	4.85	+2.11	177	1.66	1.24	−.42	75
45 to 54 years	3.04	4.27	+1.23	140	3.32	2.17	−1.15	65
55 to 64 years	2.16	3.42	+1.26	158	6.54	5.16	−1.38	79
65 years or over	1.11	1.60	+.49	144	17.77	20.76	+2.99	117

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The recorded mortality of printers in industrial insurance experience was exceptionally large and representative of the trade, including 1,590 deaths from all causes, of which 613, or 38.6 per cent, were from consumption. Of the mortality of printers from other respiratory diseases, 169 were from pneumonia, 28 from asthma and bronchitis, and 24 from less frequent respiratory diseases. If the deaths from consumption and other respiratory diseases are combined, 52.5 per cent of the mortality of printers was from diseases of the lungs and air passages. The excess in the consumption mortality of printers is decidedly suggestive of a typical indoor employment, where the exposure to the inhalation of metallic dust in minute particles is continuous and more or less unavoidable. While the consumption mortality of printers was excessive at all ages, the excess was most pronounced at 25 to 34, when out of every 100 deaths from all causes 56.3 were from consumption against a normal expected proportion of 31.3. The analysis of the consumption mortality of printers in detail is set forth in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG PRINTERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for printers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of printers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Printers.	Males in registration area, 1900 to 1906.
15 to 24 years	344	167	48.5	27.8
25 to 34 years	439	247	56.3	31.3
35 to 44 years	346	140	40.5	23.6
45 to 54 years	211	42	19.9	15.0
55 to 64 years	142	13	9.2	8.1
65 years or over	108	4	3.7	2.7
Total	1,590	613	38.6	14.8

The preceding observations and statistical data, derived from both American and foreign sources, fully confirm the conclusions that the printing trade is subject to decidedly unfavorable circumstances more or less responsible for the comparatively high degree of consumption frequency disclosed by both the general vital statistics of the occupation and the observed mortality of this class of labor in industrial insurance experience.

COMPOSITORS.

Compositors, considered as a distinct occupation (for most printers are also compositors), are exposed to practically the same health-injurious conditions as are persons engaged in the other occupations

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of the printing business, and in addition they suffer from eye strain, which may, under given conditions, affect very seriously the disease-resisting capacity of the system. Stereotyping might have been included here, and its enormous development as a separate branch of the printing trade would warrant special consideration if any really authenticated observations had been made a matter of record useful for the present purpose. In stereotyping the liability to lead poisoning is a serious factor, affecting especially the men employed in melting the alloy and ladling it into the forms. The same observation applies to operatives on linotype machines, but our present information regarding these employments is too indefinite to warrant the conclusion that the exposure to the risk of plumbism increases materially the mortality from tubercular and respiratory diseases. There are no general vital statistics of compositors separate from those of printers and pressmen, since in both American and foreign statistics these employments are considered as a group.

In the occupation mortality statistics of Rhode Island out of 12 deaths from all causes of compositors recorded during the ten years ending with 1906, 3, or 25 per cent, were from consumption and 2 from other respiratory diseases, or a total of 41.7 per cent of the deaths of compositors were from diseases of the lungs and air passages.

There may be included in this brief reference an extract from a letter by Mr. J. W. Sullivan, a New York City printer, in the Typographical Journal for November, 1903, and reprinted in the annual report of the New York bureau of labor statistics for 1906, in part as follows:

> Typesetting is exhaustive work. Standing hour by hour brings on backache, and in some men varicose veins and swollen feet. Sitting on the high printing-office stools doubles the typesetter up, constraining his arm motions and interfering with his digestion. The linotype operator's stool is too low, as it throws his legs into cramped positions. From the pot of molten type metal under his machine comes a trying heat and offensive gases. He must watch the delicate machinery lest it go wrong. The electric light thrown on his copy often sharply conflicts with the daylight. His keyboard work with wrist and fingers and his handling of hot slugs sometimes results in numbness that threatens scrivener's palsy. Whether typesetter or linotype operator, the compositor's brain is active every moment during the workday. Composition can never be wholly mechanical. Attention must be given to deciphering the copy, to spelling, to capitalizing, punctuating, office style, and correcting the lines as composed. Each of these distinct mental acts, on the whole tedious and monotonous, helps to drain the bodily forces. As the brain becomes fatigued its cells shrink. With every type a man sets there is a touch of wear on the cerebral tissue itself, only to be repaired by the restorative operations of nature—through food, rest, and sleep.

The recorded mortality of compositors in industrial insurance experience affords an opportunity to separately consider this employ-

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ment as distinct from that of printers. The mortality from all causes was 168, of which 59, or 35.1 per cent, were from consumption. Of the mortality of compositors from other respiratory diseases, 19 were from pneumonia, 1 from asthma, and 5 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 50 per cent of the mortality of compositors was from diseases of the lungs and air passages. The excess in the consumption mortality of compositors is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages under 55, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 66.7 were from consumption, against a normal expected proportion of 31.3. While at this period of life the proportionate consumption mortality of compositors was higher than the corresponding mortality of all printers, the proportions were somewhat less at other divisional periods of life, and at ages 55 and over the numbers were too small for a safe conclusion. The analysis of the consumption mortality of compositors in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG COMPOSITORS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for compositors from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of compositors, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Compositors.	Males in registration area, 1900 to 1906.
15 to 24 years	21	6	28.6	27.8
25 to 34 years	54	36	66.7	31.3
35 to 44 years	32	12	37.5	23.6
45 to 54 years	19	3	15.8	15.0
55 to 64 years	33	1	3.0	8.1
65 years or over	9	1	11.1	2.7
Total	168	59	35.1	14.8

The preceding observations and statistical data, derived from industrial insurance experience, confirm the conclusion that compositors as a class are exceptionally liable to diseases of the lungs, and that the degree of consumption frequency is decidedly excessive and apparently more so than in the printing trade as a whole.

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PRESSMEN.

Pressmen in printing plants may be separately considered, although the information regarding this occupation is rather fragmentary and inconclusive. Arlidge comments on the hygienic aspects of the employment in part as follows:

Their old mode of working has been superseded by the wonderful development of the modern printing machine, whereby the pressman has become little else than an attendant upon it; and we see the marvelous machine in newspaper offices strike off, fold, and count the sheets by thousands in an hour. Bodily strength is consequently at a discount, and the disadvantages of the occupation limited to the heat of the press room—caused principally by the heated cylinders of the press, and to a greater or smaller extent, where coal gas and not electricity is used for lighting, by the gas jets. Add to these the noise of the machines, the standing posture, and confinement in the press room and sustained attention to their work, and there remains nothing else calculated to injure the pressman's health, barring circumstances within his own control.

The occupation of pressmen does not appear to have attracted the special attention of American writers on occupation mortality, but it is safe to assume that the disease liability of this class, and in particular the degree of consumption frequency, do not materially differ from the observed mortality of men employed in the printing trade generally. More definite data, however, would supply a much to be desired addition to our at present very limited knowledge regarding the specific occupation mortality of this employment.

ENGRAVERS.

Engravers are not a very numerous, but a widely distributed, class of workmen, whose occupation is sufficiently well defined to warrant separate consideration. According to the census of 1900 there were 11,156 engravers in the United States. Engravers upon copper, steel, or other metals are subject to much the same conditions injuriously affecting health and life, and the differentiation of the employment according to the kind of metal worked upon is not practicable.

The employment decidedly predisposes to consumption, and all the available data indicate an excessive proportion of deaths from this disease among engravers, at least during the active working period of life. Aside from health-injurious factors directly resulting from operations and processes inseparable from the employment, there is also the unfavorable effect of a sedentary occupation demanding a fixed and stooping position. Arlidge has called attention to the fact that there are other accessory conditions unfavorable to health in this employment, such as the frequent use of strong light, severe taxing of the eyes,(a) and the employment of strong acids.

[a] For an extended discussion of the cause of eye strain see Biographic Clinics, Vol. IV, by George M. Gould, M. D., Philadelphia, 1906, pp. 61 et seq.; also Popular Science Monthly for December, 1905.

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Some fairly conclusive data are available regarding the mortality of engravers, with particular reference to consumption, but as an interesting case of extreme longevity mention may be made of the death of a Mr. Charles Harris at the age of 93, who for more than half a century had been an engraver of the American Bank Note Company. A somewhat similar case was the death of a Mr. James P. Mayer, who, at his death at the age of 83, was considered the oldest American steel engraver on record.

These, however, are but illustrations of exceptions and rather mark the rule of the comparative infrequency of extreme longevity among men in this employment. Thackrah held that "engravers and copperplate printers present few examples of old age," but he may have included printers and lithographers and similar employments under this term. Tracy, writing with reference to more recent and American conditions, holds that engravers, in common with lapidaries and watchmakers, are very liable to phthisis. It is probably quite true, as pointed out by Sommerfeld, that the amount of metallic or mineral dust generated in this occupation is comparatively small in quantity, but it is practically certain to be injurious in its effects just because of the minuteness of the particles. According to Sommerfeld's data, 23.6 per cent of all cases of sickness of engravers were diseases of the lungs and air passages. He suggests, among other points, as a precaution, extreme care in the physical selection of engravers' apprentices to eliminate those already predisposed to consumption. He further suggests the proper ventilation of the workshops, which in most cases is almost entirely neglected. The evidence of such neglect is brought out by the consumption mortality data of this employment for the State of Rhode Island, according to which, out of 142 deaths of engravers recorded during the half century ending with 1902, 45, or 31.7 per cent, were from consumption, against a normal mortality from this disease among men in all occupations in Rhode Island of 17.8 per cent.

The recorded industrial insurance mortality experience of engravers includes 192 deaths from all causes, of which 67, or 34.9 per cent, were deaths from consumption. Of the mortality of engravers from other respiratory diseases, 18 were from pneumonia, 1 from asthma, and 3 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 46.4 per cent of the mortality of engravers was from diseases of the lungs and air passages. The excess in the consumption mortality of engravers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at 25 to 34, when out of every 100 deaths

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from all causes 61.7 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of engravers in detail is set forth in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG ENGRAVERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for engravers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of engravers, 1897 to 1906, due to—		Per cent of deaths due to consumption, among—	
	All causes.	Consumption.	Engravers.	Males in registration area, 1900 to 1906.
15 to 24 years	31	12	38.7	27.8
25 to 34 years	47	29	61.7	31.3
35 to 44 years	42	19	45.2	23.6
45 to 54 years	34	5	14.7	15.0
55 to 64 years	19	2	10.5	8.1
65 years or over	19	.....	.....	2.7
Total	192	67	34.9	14.8

The preceding observations and statistical data, derived from industrial insurance experience, would seem to warrant the conclusion that engravers are subject to more or less unfavorable effects of their employment, resulting in a decidedly high degree of consumption frequency at early ages, but in particular at ages 15 to 44.

SUMMARY OF CONCLUSIONS REGARDING OCCUPATIONS WITH EXPOSURE TO METALLIC DUST.

Ten occupations exposed to metallic dust have been considered in detail. It is not possible in all cases to base conclusions upon identical data, since for a number of occupations no official vital statistics are available. As a method of indicating with approximate accuracy the possible effect of health-injurious employment, use may, however, be made of the statistics exhibiting the age distribution of persons in this group, and when the employments for which the data are available are combined the number of such persons under observation in the last census year was 219,579. Of this number only 3,544, or 1.6 per cent, had attained to an age of 65 years or over, against a normal expected proportion of 4.6 per cent. While it is quite probable that, to a certain extent, this small number of persons of advanced age in occupations exposing to metallic dust is the result of occupation selection, or conditions favorable to the employment of young persons, the result is, nevertheless, decidedly suggestive of conditions more or less unfavorable to health and life. The details of the age distribution

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are given in the following table, by divisional periods of life, together with the corresponding percentage distribution of all occupied males, the data for both groups being derived from the census of 1900.

NUMBER AND PER CENT OF MALES IN EACH AGE GROUP IN OCCUPATIONS EXPOSED TO METALLIC DUST, COMPARED WITH NUMBER AND PER CENT IN ALL OCCUPATIONS, 1900.

[From report of the Bureau of the Census on Occupations, 1900.]

Age.	Males in occupations exposed to metallic dust.		All occupied males.	
	Number.	Per cent.	Number.	Per cent.
15 to 24 years	75,663	34.4	5,933,720	26.0
25 to 34 years	69,998	31.9	5,993,847	26.3
35 to 44 years	41,246	18.8	4,704,662	20.6
45 to 54 years	19,711	9.0	3,250,259	14.3
55 to 64 years	9,407	4.3	1,856,181	8.1
65 years or over	3,554	1.6	1,063,856	4.7
Total	219,579	100.0	22,802,545	100.0

According to this analysis the proportion of males aged 15 to 34 was unusually large in this group of occupations, or 66.3 per cent, against 52.3 per cent expected. At ages 35 to 44 the proportion was 18.8 per cent for the group under consideration, against 20.6 per cent among occupied males generally, while at ages 45 or over the percentage proportion of males employed in occupations with exposure to metallic dust was only 14.9 per cent, against 27.1 per cent for occupied males generally. Since most of the trades considered do not involve a very considerable amount of muscular labor, it would seem safe to assume that the unfavorable age distribution is the result of a high death rate, rather than because of occupation selection, more or less favorable to the employment of persons below the age of 35 years.

It is unfortunately not possible to present a combined summary of the census vital statistics of males employed in the occupations included in this group, since it is only for printers and compositors that the census data have been made public. If, however, the mortality statistics for printers and compositors are compared with the corresponding statistics for all occupied males, the death rates are above the average and decidedly so at ages 25 to 44. The death rate from consumption was 4.36 per 1,000, against 2.37 for all occupations, while the death rate from other respiratory diseases was slightly below the average, or 1.54 against 1.97 expected.

The occupation mortality statistics of Rhode Island are available for 8 specific occupations with exposure to metallic dust and when combined return 791 deaths from all causes, of which 229 were from consumption and 99 from other respiratory diseases. The corresponding percentages were 29 per cent of deaths from consumption for

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persons employed in occupations with exposure to metallic dust, against 17.8 per cent for occupied males generally in the State of Rhode Island. The percentage of deaths from other respiratory diseases was 12.5 per cent, which was exactly the same as for all occupied males in Rhode Island.

The English vital statistics for this group of occupations are available for tool and instrument makers, brass workers, and printers and compositors. When the returns for these occupations are combined, they exhibit excessive death rates at every period of life, as set forth in tabular form, as follows:

MORTALITY FROM ALL CAUSES, FROM CONSUMPTION, AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM, IN OCCUPATIONS EXPOSED TO METALLIC DUST, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 due to all causes among—		Death rate per 1,000 due to consumption among—		Death rate per 1,000 due to other diseases of the respiratory system.	
	All occupied males.	Occupations exposed to metallic dust.	All occupied males.	Occupations exposed to metallic dust.	All occupied males.	Occupations exposed to metallic dust.
15 to 19 years.....	2.44	2.73	0.54	0.73	0.24	0.30
20 to 24 years.....	4.41	5.28	1.55	2.73	.48	.45
25 to 34 years.....	6.01	6.29	2.03	3.33	.77	.69
35 to 44 years.....	10.22	11.68	2.74	5.05	1.66	1.62
45 to 54 years.....	17.73	20.97	3.04	5.22	3.32	3.55
55 to 64 years.....	31.01	36.03	2.16	3.91	6.54	7.94
65 years or over...	88.39	92.52	1.11	1.54	17.77	22.46

The table shows that the mortality from consumption among men in occupations with exposure to metallic dust was decidedly excessive at all ages and extremely high throughout life, while the corresponding mortality rate from respiratory diseases other than consumption was fairly normal and slightly below the average at ages 20 to 44.

The industrial insurance mortality statistics are available for nine occupations included in this group, returning in the aggregate 3,502 deaths from all causes, and of this number 1,292, or 36.9 per cent, were from consumption. The deaths from other respiratory diseases numbered 469, or 13.4 per cent. The expected consumption percentage by the standard adopted for the registration area of the United States was 14.8 per cent for consumption and 11.7 per cent for other respiratory diseases. When the mortality from consumption and from respiratory diseases other than consumption are combined, the proportionate number of deaths among men in occupations with exposure to metallic dust is found to be 50.3 per cent from this group of causes, against 26.5 per cent expected.

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PROPORTIONATE MORTALITY FROM CONSUMPTION IN OCCUPATIONS EXPOSED TO METALLIC DUST, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for occupations exposed to metallic dust from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths in occupations exposed to metallic dust, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Occupations exposed to metallic dust.	Males in registration area, 1900 to 1906.
15 to 24 years	619	288	46.5	27.8
25 to 34 years	892	510	57.2	31.3
35 to 44 years	739	313	42.4	23.6
45 to 54 years	518	121	23.4	15.0
55 to 64 years	396	47	11.8	8.1
65 years or over	336	13	3.9	2.7
Total	3,502	[a]1,292	[a]36.9	[b]14.8

[a] There were also 469 deaths from other diseases of the respiratory system, or 13.4 per cent of the deaths from all causes.
[b] The per cent of deaths from other diseases of the respiratory system in the registration area was 11.7.

It is evident from the foregoing observations and statistical data relating to a sufficient number of representative employments with exposure to metallic dust, that the health-injurious effects of such exposure are reflected in the comparatively small proportion of persons of advanced years, a high general death rate, and very high specific death rates from consumption and other respiratory diseases.

OCCUPATIONS WITH EXPOSURE TO MINERAL DUST.

In the group of occupations exposing to a continuous and considerable inhalation of mineral dust resulting from industrial processes, have been included for the present purpose the following representative employments: Stone workers, marble workers, glass blowers, glass cutters, diamond cutters, potters, cement workers, plasterers, paper hangers, molders, core makers, and lithographers. These occupations are all more or less subject to an excessive death rate from all causes, but in particular to a decided excess in the proportionate mortality from consumption, and in most cases also to a comparatively high degree of frequency in the occurrence of respiratory diseases. The details of labor conditions as far as they could be conveniently included in the following summary of observations regarding particular trades appear to fully confirm the opinion that the degree of excess in consumption frequency is intimately related and in almost exact proportion to the degree of exposure to continuous and considerable inhalation of mineral dust.

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THE STONE INDUSTRY.

The stone industry in the United States is of considerable extent and wide dispersion over practically the entire country. The number of males of known ages 15 or over employed as stone and marble cutters in the United States in 1900, according to the census, was 54,039, but it is quite probable that this total does not include stone polishers, sawyers, and other similar occupations peculiar to the stone industry. The health of stone and marble cutters has, from earliest times, been held to be notoriously bad, and the hygienic importance of this trade was recognized by Ramazzini, who, as far back as 1705, discussed the subject in an entire chapter in his work on occupation mortality, stating that "in hewing marble or stones out of the rock, in polishing and cutting them, they oftentimes suck in, by inspiration, the sharp, rough, and cornered small splinters or particles that fly off; so that they are usually troubled with a cough, and some of them turn asthmatic and consumptive. * * * Our medical histories give many instances of stones found in the stomach and lungs of these workmen, for which we can assign no other material cause but the dusty particles taken in at the mouth and gradually gathered into a heap. * * * Withal, all possible caution must be used to avoid the sucking in of these minute particles at the mouth."

From the earliest to the most recent observers upon the health conditions in this trade, the conclusions have been decidedly unfavorable and suggestive of circumstances more or less possible of material improvement. Oliver, in his treatise on Diseases of Occupation, remarks, with special reference to stone masons:

The occupation of the stone mason and of the quarryman has for long been regarded as one in which a higher death rate from lung disease occurs than in most occupations. The disease, which usually assumes a chronic character, is slow in its development and progress. As it is attended by the ordinary physical signs and symptoms observed in other forms of pneumokoniosis, the malady calls for no special description other than this, that in contradistinction to miners' phthisis, which occurs in men who work underground, stone masons' phthisis is met with in men who are working in the open air, a circumstance which becomes a strong argument in favor of the dust origin of pneumokonioses as against the bacillary. After a time the lung disease becomes tuberculous, hence the extraordinary fact of the death rate from pulmonary tuberculosis among stone masons and marble cutters, who are following an outdoor occupation, being six times that of bankers and brokers, who are leading an indoor life. This want of harmony between occupation and mortality from pulmonary phthisis is observed in other outdoor occupations than stonecutting. It would appear, therefore, as if the predisposing causes of lung disease are often of greater importance than the exciting—in other words, that the soil is of as much, if not of greater, influence than the seed. The irritation of the lung caused by dust would seem

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in some instances, especially in the early stages of the disease, to create a favorable soil for the implantation of the tubercle bacillus, while in the slowly developed forms of pneumokoniosis the hard and unyielding fibrous tissue does not offer the same attractions to the micro-organism, and as a consequence it is in those parts of the lung where the structure is least fibrous that the tubercle bacilli exert their greatest power for harm.(a)

The remarks of Oliver are fully sustained by the available statistical evidence. The secretary of the Operative Masons' Society of London, in his testimony before the committee on industrial diseases, produced the mortality record for Newcastle for the period 1871 to 1896, including an account of 160 deaths of stone masons, and of this number 71, or 44.4 per cent, had died from phthisis, at an average age of only 42.23 years. It was admitted, however, that conditions had improved, and more recent data resulted in a more favorable showing. Out of 253 deaths of stone masons reported in 1905 by the same society, 79, or 31.2 per cent, were deaths from consumption. The same witness stated that the average age at death of those dying from phthisis during 1905 was 44 years, against 51 years for deaths from all causes.(b)

Conditions are probably somewhat different in this country, due to the more general use of pneumatic tools, which generate considerable quantities of fine dust, the complete prevention of which is always difficult and often is impossible. The degree of disease liability varies materially according to the specific occupation, and the risk is less in the case of paving-stone cutters and slate splitters than in the case of monument or custom work, which requires close attention in matters of minute detail and which is more often carried on indoors. Surfacing and carving and cutting with pneumatic tools are the most dangerous employments, and the risk is less in polishing, grinding, sawing, and lathe work, most of which is carried on by the wet process. Large quantities of dust are stirred up, however, in the brushing off and cleaning up of the accumulated dust, and in the moving of materials, dropping of slabs, etc. There is, therefore, more or less dust exposure in all branches of the stone industry, but the results of exposure vary according to the kind of material, which includes a large variety of stones, chiefly, however, granite, marble, limestone, sandstone, bluestone, slate, etc.

The stonecutter's trade is one which requires both skill and arduous physical labor. The men as a rule work in the open air, and in very warm or wet weather under shelter; but all are liable to inhale the dust and small particles from the material upon which they operate. This on some kinds of stone is much more deleterious to health than

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[a] Diseases of Occupation, London, 1908, p. 305.

[b] Minutes of Evidence, Departmental Committee on Compensation for Industrial Diseases, p. 322.

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on others, the stone containing the largest proportion of flints being much more injurious than that which has most lime in it. The returns show that the present age of stonecutters is three years less than that of carpenters or masons, while the average number of years at work exceeds that of either by nearly one year. But this is accounted for by reason of the difference in the ages at which they began to work, which by 63.9 per cent of stonecutters was under 15 years of age; while in the other two trades mentioned it was 13.8 per cent and 4 per cent, respectively. The explanation is that in England, Ireland, and Scotland, as well as in other European countries, seven years are the rule for apprenticeship of stonecutters, and a large proportion are taken when 12 years old, and quite a number under this age. Eighty-three and one-half per cent of the total number were foreign born and but 16.5 per cent American born; and of the latter but nine-tenths of 1 per cent began to work under 15 years of age; while 15.4 per cent of carpenters and 25.6 per cent of masons began to work at their respective trades after the age of 20 years and upward, none of the stonecutters had reached this age. This fully accounts for the differences above noted.(a)

In his discussion of the hygiene of this occupation Lloyd makes the following observations:

Stonecutters and quarrymen suffer in various degrees from the inhalation of dust. The extent of the evil in their cases depends upon, first, the character of the dust and, second, the circumstances amid which the work is pursued. The quality of the stone has much to do with the extent of pulmonary disease among stonecutters. Some stone is much more dusty than others. A sedimentary stone, for instance, that was formed originally simply by the deposit of earthy and siliceous particles under water is much more liable to give off a large quantity of dust than is a stone that was fused in early geological ages—the igneous stones, for instance, like granite. Although the particles from these latter stones are exceedingly hard, yet there is not much true dust, only the particles actually displaced by the contact with the tool being thrown off. These probably do not carry far in the air, and are mostly too large to gain access to the alveoli as dust. This was the explanation given by Hamilton, of Aberdeen (quoted by Arlidge), for the fact that the masons and polishers at the Aberdeen quarries do not suffer much, if any, with industrial phthisis.

A brief abstract from a special report of the Massachusetts state board of health on dangerous occupations, as suggestive evidence particularly applicable to American conditions at the present time, is also included here:

It is preeminently a dusty trade, and the workmen are, therefore, exposed to the danger of inhaling nonabsorbable and irritating particles of mineral matter. Accidents to the eyes from flying chips are also very common, but they are generally less serious than those due to fragments of steel from the tools employed. Of the various kinds of stone dust, granite is regarded as more injurious than marble, and

(a) Fourteenth Annual Report of the Bureau of Statistics of Labor and Industries of New Jersey, 1891, pp. 176, 177.

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soapstone the least of all; but different granites vary in this particular, some yielding a much finer dust than others, on account of differences in texture. The greatest amount of dust comes from the surfacing machines, which are operated with compressed air. The tool is either a large hammer or an instrument which presents four smaller separate faces. Sometimes a bushing hammer, made of thin, chisel-like blades bolted together, is used; this creates the finest dust of all. The men who operate the surfacing tools rarely wear masks, but many chew tobacco and spit, in the belief that the practice serves to protect them from the effects of the dust to which they are exposed. Some protect themselves from flying chips by means of wire screens placed about the hammer; some wear wire masks and some wear glasses. By a union regulation, surfacing is done in the open sheds in the yard. While the operation of smoothing can not be done by the wet process, on account of clogging of the tools with the pasty material which would thereby be produced, polishing is conducted with the application of water, which prevents the evolution of dust. The sawing of granite and marble into slabs is conducted ordinarily by the wet process, and is therefore unattended by dust; but soapstone sawing and cutting for joints is frequently done dry, and with the evolution of much fine dust. Turning in lathes is conducted in the wet way, and is dustless.

Of 343 deaths which occurred in the city of Quincy among stonecutters during a period of about sixteen years, no fewer than 142 (41.4 per cent) were due to pulmonary tuberculosis, 41 (12 per cent) to other diseases of the lungs, 44 (12.8 per cent) to diseases of the heart, 24 (7 per cent) to violence, and 92 (26.8 per cent) to all other causes. Excluding accidents, the percentage due to tuberculosis was 44.5. These statistics show even more strikingly than those quoted in a report submitted two years ago the dangerous character of this occupation. Therein it appears that, of a total of 30,000 deaths among stonecutters, tuberculosis was the cause in 28.57 per cent. It must be said, however, that the average age at death of the victims of the disease in this industry, so far at least as the Quincy records show, is somewhat high (47.8 years), but it is to be borne in mind that the calling is one which is not open to the naturally weak, and that many of those who become incapacitated through infection drift into other lines of industry in which physical strength is not so essential, and hence at death are not returned as belonging to this class.

STONEWORKERS.

No very satisfactory data for this country are available to determine with accuracy the probable degree of difference in the health-injurious conditions resulting from the cutting or manipulation otherwise of the different kinds of stone, such as granite, sandstone, limestone, bluestone, slate, etc., except marble-cutters, to be separately considered as a well-defined branch of the trade. The term stonecutter is, therefore, practically inclusive of all branches of the industry and of all the different employments necessary in connection therewith. An observer of conditions in the sandstone industry states that "stonecutters who work on sandstone seldom live to be 50 years

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of age, and nearly all of them die of lung disease due to the inhalation of mineral dust;" but how far this is sustained by actual experience in the regions where sandstone is quarried and cut can not be stated at present. A physician of long residence in the New Bedford, Ind., limestone field, states that he has not observed very serious consequences to result from employment in that branch of the stone industry, but all such observations are subject to serious error in the absence of trustworthy statistical data for a period of years.

The Vermont state board of health has reported the mortality by occupations during the six years ending with 1905, and during that time there were 204 deaths from all causes among the granite and stone cutters and workers in that State. Of those deaths 80, or 39.2 per cent, were from consumption, and 27, or 13.2 per cent, from other respiratory diseases. Of the deaths from all causes among granite and stone cutters and workers in Vermont, 52.4 per cent was due either to consumption or to other respiratory diseases.

In the State of Rhode Island during the period 1897–1906, 125 deaths of stone and marble cutters and workers were recorded, and of this number 40, or 32 per cent, were from consumption, compared with the average of 17.7 per cent for men in all occupations in that State. The census mortality statistics for 1900 combine marble and stone cutters into one group, including 26,141 males aged 15 years or over in the registration States. Of the number stated, 659, or 2.5 per cent, had attained to 65 years of age or over, which compares with 3.9 per cent for men in mechanical and manufacturing industries generally. In the mortality from all causes the death rate was comparatively low at ages under 25, but high at ages 25 or over, as shown in detail in the table following. The census mortality statistics, however, are subject to the criticism that in all probability the facts are understated on account of defective enumeration, and the table must, therefore, be used with caution.

MORTALITY FROM ALL CAUSES AMONG MARBLE AND STONE CUTTERS, COMPARED WITH THAT OF THE MANUFACTURING AND MECHANICAL CLASS AND THE MERCANTILE AND TRADING CLASS, IN THE REGISTRATION STATES, 1900, BY AGE GROUPS.

[From report of the Bureau of the Census on Vital Statistics, 1900.]

Age at death.	Death rate per 1,000 among—		
	Marble and stone cutters.	The manufacturing and mechanical class.	The mercantile and trading class.
15 to 24 years	3.35	4.43	2.60
25 to 44 years	9.32	8.35	6.72
45 to 64 years	24.72	20.16	19.91
65 years or over	122.91	105.43	93.79

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A further difficulty in connection with the vital statistics of stone and marble cutters results from the fact that men in this trade are a very mobile element, frequently moving from one place to another in response to better trade conditions, higher wages, etc., in other fields. The most suggestive results of the census mortality investigation is the extraordinary death rate from consumption, which is returned at 5.41 per 1,000, compared with 2.62 for the mechanical and manufacturing class, and 1.66 for the mercantile and trading class. The statistics of Rhode Island and the United States census of 1900 confirm, therefore, the conclusion that consumption among men employed in the stone industry is of exceptional frequency and in fact by far the most common cause of death.

For reasons unknown, the Report of the Registrar-General for England and Wales does not specifically consider stonecutters, but they are combined with quarrymen in stone and slate, which, of course, precludes the utility of the resulting averages in an effort to determine the relative degree of consumption frequency in a well-defined specific occupation such as the stonecutter's trade. Even when considered as a group, however, quarrymen and stonecutters combined, according to English statistics, show an excessive mortality from consumption and other respiratory diseases, but it is a matter of regret that the data should not be separately available for men employed in the more important branches of the stone industry.

The recorded industrial insurance mortality experience of stoneworkers includes 858 deaths from all causes, of which 302, or 35.2 per cent, were from consumption. Of the mortality of stoneworkers from respiratory diseases other than consumption, 95 were from pneumonia, 13 from asthma, 30 from bronchitis, and 24 from less frequent respiratory diseases. If the deaths from consumption and from respiratory diseases other than consumption are combined, it is found that 54.1 per cent of the mortality of stoneworkers was from diseases of the lungs and air passages. The excessive mortality from lung diseases among stoneworkers is therefore sustained by all of the numerous investigations which have been made into the health conditions of this employment. The excess in the consumption mortality of stoneworkers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 35 to 44, when out of every 100 deaths from all causes 47.7 were from consumption against an expected normal proportion of 23.6. The analysis of the consumption mortality of stoneworkers in detail is set forth in the table following.

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PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG STONEWORKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for stoneworkers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of stoneworkers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Stoneworkers.	Males in registration area, 1900 to 1906.
15 to 24 years	21	10	47.6	27.8
25 to 34 years	114	60	52.6	31.3
35 to 44 years	172	82	47.7	23.6
45 to 54 years	232	91	39.2	15.0
55 to 64 years	199	52	26.1	8.1
65 years or over	120	7	5.8	2.7
Total	858	302	35.2	14.8

The preceding observations and statistical data, including the industrial insurance mortality experience of this class, fully confirm the conclusion that this occupation is to be classed as decidedly unhealthful and that the degree of consumption frequency is materially above the normal at all ages, but that the excess is most marked at ages 35 to 44.

MARBLE WORKERS.

Marble workers constitute a distinctive and well-defined group of the stone industry, which it has seemed best to consider separately, though most of the general statistics appertaining to the occupation are included in the stone industry considered as a whole. The American marble industry is centered chiefly in Vermont, where about 60 per cent of all the marble produced in the United States is quarried, and most of it is cut and dressed, sawed, or polished, as the case may be, in the locality where quarried. The Vermont state board of health has for some six years past reported the mortality by occupations, and of the deaths of marble workers reported in that State, out of a mortality of 42 from all causes, 5 were from consumption and 5 from other respiratory diseases. The fact that Vermont is an otherwise exceptionally healthful State goes far to mitigate the intrinsic dangers of the occupation resulting from continuous exposure to the inhalation of stone dust.

Bertillon, in his observations on morbidity and mortality, refers to stonecutters and workers in marble in Switzerland as being subject to a considerable mortality, principally from phthisis, which rapidly increases with age. Under 20 years of age, according to this authority, it is rarer than among the mass of the population; from 20 to 29 it equals the average, from 30 to 39 it is double, from 40 to 49 it is

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triple, and from 50 to 59 it is four times the average rate of the Swiss as a nation. He also refers to Italian statistics, which are significant on account of the remarkable development of the marble industry at Carrara, stating that stonecutters and pavers average fewer days of sickness than the whole population up to 45 years, but considerably more above that age. At Paris the workers in marble are subject to a high death rate at all ages.

A very instructive descriptive account of the machine process as generally employed in the marble industry was included in the report on the stone industry for 1908, by Mr. W. C. Day, of the United States Geological Survey, from which the following extract is made as emphasizing the more or less health-injurious circumstances of employment in marble manufacture:

After being sawed the slabs are placed on a "rubbing bed," which consists of a circular cast-iron plate, from 8 to 15 feet in diameter, the older forms having a circular opening from 1 foot to 18 inches in diameter in the center. The plate is planed to a smooth surface and is mounted upon running gear so that it may revolve in a horizontal plane. Fixed arms, usually four in number, are sustained radially about one-fourth of an inch above the plate, either by an upright passing through the central opening or by a framework overhead (in the case of the newer solid forms of bed). The slabs of stone to be polished are placed upon the bed in front of the arms, and the bed is revolved slowly beneath them in such a direction as to hold them firmly against the arms. An abrading material, such as sand, sometimes mixed with "chilled shot," or crushed steel, with a constant supply of water, is fed upon the plate. If necessary, the stones are weighted to increase the friction. From this rubbing bed the slabs are removed to the emery bed, which is similar to the former, fine emery being used for abrasion. They are then rubbed down by hand with a fine, evenly grained sandstone, commonly called a "Scotch hone," with a sufficient supply of water, and smoothed off with pumice stone and water. The final polish is put on by rubbing the slabs upon a buffing bed, similar in form to the rubbing bed, but covered with a thick, specially prepared felt, upon which a small amount of "putty powder" (oxide of tin) is fed, to give a high gloss. The hand process consists in grinding on the rubbing bed as before, and then rubbing down by hand successively with Nova Scotia "blue stone," "red stone," "Scotch hone," and pumice stone, after which it is glossed with putty powder, or, in case of cheaper "onyxes" and common marbles, with a mixture of two parts of oxalic acid and one part of tin oxide.

In marble cutting, as in the stone industry generally, the introduction of pneumatic tools operated by compressed air has brought in a new and decidedly health-injurious factor, since the amount of dust generated by this process is very much greater than when the work is done entirely by hand with the ordinary chisel and mallet. Portable stone-dressing machines have been invented and quite widely

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adopted, since in part the quality of the work done by these machines is superior to hand work, while the productive capacity is claimed to be from eight to fifteen times as much as when the work is done entirely by hand. Exhaust air is employed to keep the stone clean at the point of impact of the cutting tool, but the clouds of dust raised by this apparatus are considerable, even though the work is usually done outside of the shed. Aside from the dust generated in either machine or hand cutting, a vast amount of dust is produced during cleaning-up operations, and while labor organizations have, in part, provided against this risk by special regulations, the generation of much dust is practically unavoidable under the existing methods by which the work is carried on.

The United States census mortality statistics combine marble and stone cutters, so that it is impossible to separately consider statistically the mortality of this employment. As has been previously pointed out in discussing stonecutters generally, the evidence is entirely conclusive that the mortality from consumption and other respiratory diseases among this class is decidedly excessive. It is observed in the report on Vital Statistics of the census of 1890 (Vol. I, p. 144) that "it will be seen from the preceding table that among marble and stone cutters in the United States the greatest proportion of deaths was due to consumption, being much greater than the average proportion due to this cause in this class. The proportion of deaths of marble and stone cutters in the United States due to diseases of the respiratory system was greater than the average proportion in this class." The respective rates per 1,000 living were 3.15 for consumption against an average of 2.11 and 1.91 for other respiratory diseases against an average of 1.54 among occupied males in manufacturing and mechanical industries generally.

The recorded industrial insurance mortality statistics of marble cutters include 200 deaths from all causes, of which 56, or 28 per cent, were from consumption. Of the mortality of marble workers from respiratory diseases other than consumption, 26 were from pneumonia, 7 from asthma and bronchitis, and 3 from less frequent respiratory diseases. If the deaths from consumption and from respiratory diseases other than consumption are combined, 46 per cent of the mortality of marble workers was from diseases of the lungs and air passages. The excess in the consumption mortality of marble workers is less than the excess in the consumption mortality of stoneworkers generally, and this fact is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was high during the entire active working lifetime of marble workers, the excess in the mortality was most pronounced at 25 to

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34, when out of every 100 deaths from all causes 50 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of marble-cutters in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG MARBLE CUTTERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for marble-cutters from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of marble cutters, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Marble-cutters.	Males in registration area, 1900 to 1906.
15 to 24 years	3	.....	.....	27.8
25 to 34 years	30	15	50.0	31.3
35 to 44 years	40	16	40.0	23.6
45 to 54 years	46	16	34.8	15.0
55 to 64 years	50	7	14.0	8.1
65 years or over	31	2	6.5	2.7
Total	200	56	28.0	14.8

The preceding observations and statistical data, derived from industrial insurance mortality experience, confirm the conclusion that the degree of dust exposure in this occupation is about the same as among stoneworkers generally and that the degree of consumption frequency among marble cutters is materially above the average, but decidedly so at ages 25 to 34.

THE GLASS INDUSTRY.

The glass industry in the United States gives employment to some 50,000 wage-earners, of whom about 10 per cent are children under 16 years of age. The industry is a varied one, including among others the manufacture of blown and pressed ware, of window glass and plate glass, and finally of so-called crystal or cut glass, which for the present purpose is considered as a separate industry. The labor division of the trade includes numerous and well-defined occupations, each of which is subject to more or less injurious circumstances, but of these the handling of materials and the mixing are the most liable to the risk of continuous inhalation of mineral dust. The most important employment is that of the glass blower, but there are few accurate statistics which separate this employment from the industry as a whole. For the present purpose, however, it has seemed best, as far as practicable, to consider the mortality of glass blowers by itself, although the medical observations subsequently to be quoted refer more or less to glass workers as a class. Changes in manufacturing processes and the introduction of labor-saving machinery have resulted

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in sanitary improvements, which in consequence have had a favorable effect upon the health of glass blowers, at least in the United States, as far as the rather fragmentary statistical data can be relied upon. Among glass workers as a class, consumption is of exceptional frequency, in addition to which there is a comparatively high mortality from other respiratory diseases, lead poisoning, and heat prostration.

Thackrah, writing in 1832, held that glass workers as a class were liable to catarrh and cough, but not to pleurisy and pneumonia. He commented upon the appearance of a fine dust at the furnaces which, however, in his opinion did not produce any marked effect on the health of the operatives. He also mentioned individual cases of glass workers remaining at their employment at ages 70 to 80, but in the majority of instances failing eyesight at ages 50 to 60 disqualified for the employment. Thackrah's account of this occupation was, however, very superficial, and some of his conclusions were not at all in conformity to the facts as reported by other authorities. Tracy, writing in 1879, held that—

In the manufacture of glass the workmen who grind and powder the siliceous material inhale great quantities of very irritating dust, and suffer from constant hacking cough and conjunctivitis. It is rare to find a sound man among them, and they are not able to continue long at the work. According to Hirt, they should not be allowed to labor, at a stretch, more than two or three weeks, and should then work at something else, or, at any rate, give up this occupation for at least double the working time. In this way, by the use of relays, the health of the men may be sustained.(a)

Since the health-injurious effects of any given industry are, to a certain extent, measured by the proportion of those who attain to advanced ages, it is of interest to note that out of 47,245 glass workers in the United States of known ages, only 392, or 0.8 per cent, had attained to age 65 or over. The age distribution of male glass workers in the United States, according to the census of 1900, was as follows:

NUMBER AND PER CENT OF MALE GLASS WORKERS IN EACH AGE GROUP, COMPARED WITH NUMBER AND PER CENT OF MALES IN ALL OCCUPATIONS, 1900.

[From report of the Bureau of the Census on Occupations, 1900.]

Age.	Male glass workers.		All occupied males.	
	Number.	Per cent.	Number.	Per cent.
10 to 14 years	2,849	6.0	875,342	3.7
15 to 24 years	17,882	37.9	5,933,720	25.1
25 to 34 years	13,314	28.2	5,993,847	25.3
35 to 44 years	7,625	16.1	4,704,682	19.9
45 to 54 years	3,838	8.1	3,250,259	13.7
55 to 64 years	1,345	2.9	1,856,181	7.8
65 years or over	392	.8	1,063,856	4.5
Total	47,245	100.0	23,677,887	100.0

(a) Buck's Hygiene and Public Health. Vol. II, pp. 36, 37.

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The actual numbers, as well as percentages, of glass workers at advanced ages is surprisingly small. It is evident that the rapid diminution of the number at work after age 35 must be partly, at least, the result of a high death rate at the younger ages, and in particular an excessive mortality from consumption, which at this period of life causes from one-third to one-half of the deaths from all causes. Tatham, in Oliver's Dangerous Trades, considers this employment at some length, and his observations, based largely upon English mortality data, are quoted in part as follows:

The making, blowing, and engraving of glass occupies a prominent place among unhealthy trades for several reasons. In the first place, the workers are exposed to extreme variations of temperature—in some processes, that of glass blowing especially, the operatives are constantly exposed to the intense heat of the furnace, as well as to that which radiates from the pots of molten glass which they are engaged in blowing. The intense heat and profuse sweating naturally induce painful thirst, which the workmen evidently allay by excessive drinking; this is shown by the fact that their mortality from alcoholism and from nervous disorders is nearly double that experienced by operatives in other trades. * * * The comparative mortality figure for glass makers is 1,487, and is, therefore, in excess of the average by 56 per cent. Phthisis and diseases of the respiratory system are especially fatal to workmen in this industry, and they suffer more severely than other occupied males from diseases of the circulatory, digestive, and urinary systems, as well as from cancer. Since 1881 the mortality of glass workers has increased considerably, and this is true of the younger as well as the older workers in this industry.

The English mortality statistics upon which these conclusions rest include 1,092 deaths of glass workers, and of this number 229, or 21 per cent, died from consumption. At ages 25 to 34, however, out of 177 deaths of glass workers from all causes, 79, or 44.6 per cent, were from consumption. Of the mortality from other causes, bronchitis caused 146 deaths, pneumonia 123, and other respiratory diseases 25. These combined with deaths due to consumption make a total of 523, or 47.9 per cent, from diseases of the lungs and air passages in the mortality of glass workers from all causes. The most recent English mortality statistics of glass manufacture are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

In this occupation the death rates exceed the standard for occupied and retired males at all stages of life by proportions ranging from 12 to 32 per cent. In the main working period the comparative mortality figure is 1,260, or 25 per cent above the standard. The excess of mortality among these workers is most marked in the case of plumbism, phthisis, respiratory diseases, and Bright's disease; they

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also suffer heavily from influenza and from diseases of the nervous and circulatory systems. The mortality from alcoholism, accident, and suicide, however, is below the average.

The recent English mortality statistics for glass workers are quite conclusive of the more or less unfavorable effect of this industry on health. In the table which follows the mortality from all causes among men in this group is compared with that of occupied males generally, and the result is decidedly suggestive of conditions in this trade more or less unfavorable to life and health. The excess in the general death rate of glass workers is met with at all ages, but the relative and actual excesses are greatest with advancing years, being 6.41 per 1,000 at ages 45 to 54, 10.83 at 55 to 64, and 30.99 at 65 or over.

MORTALITY FROM ALL CAUSES AMONG GLASS WORKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for glass workers.		
		Rate per 1,000.	Greater(+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	3.22	+ 0.78	132
20 to 24 years	4.41	5.09	+ .68	115
25 to 34 years	6.01	6.74	+ .73	112
35 to 44 years	10.22	13.14	+ 2.92	129
45 to 54 years	17.73	24.14	+ 6.41	136
55 to 64 years	31.01	41.84	+10.83	135
65 years or over	88.39	119.38	+30.99	135

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of glass workers from consumption and other respiratory diseases is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that the mortality from consumption is excessive at all ages, 15 to 64 inclusive, the excess being most marked at ages 35 to 54. The table further shows that the mortality of glass workers from other respiratory diseases is excessive at all ages, the excess being most marked at ages 45 or over. The two tables derived from English experience fully confirm the previous conclusion that the mortality of glass workers is excessive when comparison is made with the mortality of occupied males generally, and that this excess is largely because of the high degree of consumption frequency at

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ages 25 to 54, and a high mortality from other respiratory diseases at ages 35 or over. The table which follows requires no further comment and is otherwise self-explanatory.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG GLASS WORKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for glass workers.			Death rate per 1,000 for all occupied males.	Death rate for glass workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.54	0.56	+0.02	104	0.24	0.28	+ 0.04	117
20 to 24 years. ...	1.55	1.81	+ .26	117	.48	.60	+ .12	125
25 to 34 years.....	2.03	2.88	+ .85	142	.77	.99	+ .22	129
35 to 44 years.....	2.74	4.56	+1.82	166	1.66	2.43	+ .77	146
45 to 54 years.....	3.04	4.87	+1.83	160	3.32	5.76	+ 2.44	173
55 to 64 years.....	2.16	2.97	+ .81	138	6.54	10.75	+ 4.21	164
65 years or over...	1.11	.....	.....	.....	17.77	28.68	+10.91	161

GLASS BLOWERS.

The recorded industrial insurance mortality statistics of glass blowers include 282 deaths from all causes, of which 85, or 30.1 per cent, were from consumption. Of the mortality of glass blowers from respiratory diseases other than consumption, 17 were from pneumonia, 3 from asthma and bronchitis, and 6 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 39.4 per cent of the mortality of glass blowers was from diseases of the lungs and air passages. The excess in the consumption mortality of glass blowers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. The consumption mortality was excessive at all ages under 55, but the numbers at ages 55 or over are too small for a safe generalization. The excess in the mortality was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 56.4 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of glass blowers in detail is set forth in the table following.

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PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG GLASS BLOWERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for glass blowers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of glass blowers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Glass blowers.	Males in registration area, 1900 to 1906.
15 to 24 years	24	11	45.8	27.8
25 to 34 years	78	44	56.4	31.3
35 to 44 years	59	15	25.4	23.6
45 to 54 years	55	11	20.0	15.0
55 to 64 years	26	1	3.8	8.1
65 years or over	40	3	7.5	2.7
Total	282	85	30.1	14.8

The preceding observations and statistical data confirm the conclusion that glass blowers as a class are subject to an excessive mortality from consumption, but in particular at ages 15 to 44, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

GLASS CUTTERS.

Glass cutters, including under this term all who are employed in the manufacture of crystal or so-called cut glass, constitute a separate and well-defined occupation division in glass manufacture. The most important employments are roughing, smoothing, polishing, and puttying, but of these the last named is the most injurious, chiefly because of a specific liability to lead poisoning. The sanitary aspects of the employment have received the special consideration of a British committee on dangerous trades, which, in its Third Interim Report, remarked, with special reference to the injurious effects of putty powder in the form of dust, that—

It will thus be seen that all persons employed in places where "putty powder" is used, though themselves not handling it, are liable, through inhalation of the dust, to illness and even death through juxtaposition with those engaged in its use. Under existing circumstances the wet powder splashes onto the clothes not only of the polisher who uses it, but onto those of his neighbors; it gets dry after a time, comes off in fine dust, and enters the system either by inhalation through the lungs or by swallowing or through the pores of the skin.

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Among other recommendations for the amelioration of the more or less health-injurious conditions inherent in this employment, the committee suggested that all persons engaged in the department of glass cutting and powdering, where putty powder, so called, is used, should be examined once a month by the certifying surgeon for the district, who should be empowered to order temporary or permanent suspension of work.

Aside from the exposure to the inhalation of dust containing lead or other metallic ingredients, there is a further liability to the inhalation of considerable quantities of mineral dust in a large variety of forms. It would obviously be very difficult to estimate with even approximate accuracy the degree of lung injury resulting from dust exposure in glass cutting and polishing, but it is the opinion of qualified authorities that practically every branch of the trade is more or less affected, with a resulting excess in the mortality from consumption. Tracy comments briefly upon the health-injurious aspects of this occupation in part as follows:

But the most dangerous work is that of the grinders and polishers of cut glass. About 35 per cent of them have chronic pneumonia (phthisis), and their average age at death is variously given at from 30 to 42 years. Putégnat (de Lunéville) has described a peculiar form of gingivitis which he has observed among glass cutters, and which, he says, attacks 95 out of every 100 workmen. It comes on in about three months after the person begins work, and toward the sixth month is well developed. It attacks by preference the upper jaw, and is accompanied by the same blue line that is found in cases of lead poisoning. The acid secretion of the gums destroys the enamel of the teeth, which soon become pointed, brittle, and break off close to the alveoli, leaving a permanent stump. The gums remain soft and spongy, and the breath is very fetid. At no time is there any pain or hemorrhage. He supposes it to be caused by malnutrition, bad air, etc. (Tardieu). These symptoms certainly appear suspiciously like those of lead poisoning, and the suspicion is rendered stronger by the fact that French flint glass contains about 20 per cent of lead, and that other symptoms of lead poisoning are not uncommon in glass cutters, as colic, constipation, muscular pains, etc. Garrod has noticed the frequency of gout among them, and brings it forward to support his theory of a connection between that disease and saturnine poisoning.

The grinding or etching of glass by the sand blast fills the rooms with a dust composed of particles of sand and glass mingled. The business is a comparatively new one, and the workmen so far do not appear to be injured by it, with the exception of a slight tickling cough when they first begin work. The dust is rather coarse and heavy, and I am inclined to think it does not penetrate very far into the lungs, perhaps not even getting beyond the trachea, whence it is easily expectorated.

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Lloyd also considered this employment, holding that—

Flint glass contains lead, being chemically a compound of silicon (silicic acid) with an alkaline and an earthy base, the latter being represented by lead. It is this flint, or lead, glass that is used for cut glass because of its brilliancy. The glass cutter's mill is a revolving disk of wrought or cast iron on which is fed a mixture of sand and water, with which the cutting and polishing are accomplished. In this process, which requires the artisan to bend closely over his mill, dust and fine particles of glass are given off. Emery and putty powder also are used, the latter containing lead. These are the noxious agents by which these cutters and polishers of flint glass acquire lead poisoning.

There are, unfortunately, no official vital statistics of this occupation, since the comparatively small group of cutters of crystal glass is included in the census vital statistics with glass workers generally. Cutters of crystal glass are continuously and considerably exposed to the inhalation of fine particles of mineral dust, which must indeed disastrously affect the lungs of the workmen, but in particular such as are otherwise predisposed to consumption. The suggestion of Oliver and others that crystal glass polishers and cutters should be periodically medically examined for cases of lead poisoning applies equally to the purpose of discovering incipient cases of tuberculosis more or less the result of the employment.[a]

The recorded industrial insurance mortality statistics of glass cutters include 116 deaths from all causes, of which 40, or 34.5 per cent, were from consumption. Of the mortality of glass cutters from respiratory diseases, other than consumption, 12 were from pneumonia, 1 from asthma, and 2 from less frequent respiratory diseases. The numbers are rather small for a safe generalization, but if the deaths from consumption and from respiratory diseases other than consumption are combined 47.4 per cent of the mortality of glass cutters was from diseases of the lungs and air passages. The excess in the consumption mortality of glass cutters is more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages under 55, the numbers being too small for definite conclusions for older ages, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 46.7 were from consumption, against a normal expected proportion of 31.3.

[a] For additional references to the health-injurious circumstances in glass cutting and polishing, see the Reports of the Chief Inspector of Factories and Workshops for 1895, Vol. I, p. 36; 1896, p. 25; 1899, pp. 16, 313; 1900, p. 207; 1901, Part I, p. 220. For a descriptive account of the various manufacturing processes, see Scientific American for April 30, 1904.

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PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG GLASS CUTTERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for glass cutters from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of glass cutters, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Glass cutters.	Males in registration area, 1900 to 1906.
15 to 24 years	26	7	26.9	27.8
25 to 34 years	30	14	46.7	31.3
35 to 44 years	27	11	40.7	23.6
45 to 54 years	20	5	25.0	15.0
55 to 64 years	8	1	12.5	8.1
65 years or over	5	2	40.0	2.7
Total	116	40	34.5	14.8

The preceding observations and statistical data confirm the conclusion that glass cutters as a class are subject to an excessive mortality from consumption, but in particular at ages 15 to 44, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

DIAMOND CUTTERS.

Diamond cutting, although an employment of rather limited extent in the United States, is of interest and importance as an occupation with exposure to mineral dust. Hand cutting is very rare and machine cutting is at the present time the general rule in the trade, as carried on under American conditions. There has been a decided improvement as the result of the active efforts of the Diamond Polishers' Union, which has a membership of about 400 in New York City alone. The occupation has the advantage of being well paid, at least in many individual instances, and some of the cutters are reported to receive as much as $80 and polishers as much as $60 a week.

The process of diamond cutting and polishing consists of two parts. After the stone has been cut it is taken to the polishing room, where the setter selects a suitable sized brass cup, called a dope, fills it with a mixture of lead and tin and melts it in a gas flame. After working the solder to its proper shape, he places the diamond in the center, leaving only a very small part exposed. A mark is made on the solder before it becomes fairly set, and then the stone is passed on to the polisher. By the mark made on the solder the latter knows at once the exact run of the grain and the way it will polish to the best advantage. The polisher uses a circular disk composed of very

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porous iron, so that as the diamond is polished away in the form of dust it enters the pores of the iron, the result being that diamond cuts diamond.

According to Hirt, the first-mentioned process is exceedingly unhealthful. The bent position of the workman, the heat, and the danger of lead poisoning all contribute to make the occupation an unhealthful one. The principal bad features of the second process are the dust inhalation and the straining of the eyes. While very little dust escapes into the air, the little, according to Hirt, is very bad in its effects, as the particles are angular, sharp, and, of course, very hard.

Arlidge in his observations upon the diamond cutter's trade remarks, however, that—

From our own observation of diamond cutting and polishing we can scarcely imagine any definite morbid result from the dust of the gem. It is far too precious to fritter away into dust by any coarse grinding likely to give off a tangible quantity of this substance, and we suspect that the recorded ill health of diamond workers is chiefly attributable to accidental circumstances connected with the charcoal furnaces formerly used; to overheated and badly ventilated workshops, and to dissipated habits among the employees. So far as diamond dust may possibly be thrown off in the polishing process, so far, doubtless, would it be an irritant to the respiratory organs by reason of the very sharp and angular character of its atoms.

The employment is divided into cutters, splitters, and polishers. In Amsterdam, the chief center of the industry, some 9,000 persons are employed, according to a report by United States Consul Hill. The hygienic conditions of the trade in Amsterdam, however, are apparently less satisfactory than in the United States. The principal factors detrimental to health result from the use of tin and lead as an alloy, and a prize has been offered by the Dutch Government for a nonpoisonous composition, but thus far the requirements governing the award of the prize appear not to have been complied with. Tracy comments upon the sanitary aspects of the employment as follows:

In diamond cutting the amount of dust created is small, and yet the occupation is a very injurious one. The "setter" prepares the diamond for the cutter by soldering it on the end of a copper rod with an alloy of 4 parts lead to 1 of tin. He does this with a charcoal fire, and is exposed to great heat, as well as to poisonous gases. The setters suffer from headache, tinnitus aurium, impaired digestion, and irregularity of the bowels. In Coster's factory, at Amsterdam, 73½ per cent of them were pale and emaciated, 57 per cent had palpitation, giddiness, præcordial distress, 56 chronic headache, 36 asthma, etc. The use of solder produces lead poisoning. Out of 90 examined, 30 showed traces of poisoning. In general, they are all sick men, and suffer from lung troubles. Nine per cent had phthisis. The cutters or polishers grind the gems on iron wheels covered with

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diamond dust and oil. The dust inhaled by them, though small in quantity, is enough to cause frequent chronic lung troubles. In Coster's factory, 52 per cent of them were thin and pale, 40 per cent asthmatic, 33.75 suffered from headaches, etc.

No American vital statistics of this occupation have been published, but the occupation is evidently one which requires to be classified among unhealthy trades and in which the degree of consumption frequency is the result, more or less, of the continuous and considerable inhalation of mineral dust.

POTTERS.

The pottery industry includes the manufacture of earthenware, china, and porcelain. It always has been recognized as one of the unhealthiest of trades, but the health-injurious effects vary widely according to particular employments. The most seriously exposed are the dippers, flint-mill workers, ground layers, mixers, scourers, and sweepers. In all of these employments except the first the exposure to health-injurious mineral dust constitutes a serious menace to health. In the case of dippers the liability to dust inhalation is modified and increased in seriousness by the risk of lead poisoning. The degree of dust exposure is also very serious in the case of kilnmen, mold makers, placers, pug-mill workers, sagger makers, and slip makers. In the aggregate the industry gives employment in the United States to about 16,000 persons, of whom one-fifth are women. The sanitary conditions of the trade have often been investigated, and the most recent evidence is to the effect that there have been material improvements within the last few decades. The most careful and useful observations of the industry were made by Arlidge, who for many years lived in the Staffordshire pottery district of England. Before quoting Arlidge the fact may be briefly referred to that as early as 1705 Ramazzini, in commenting upon the diseases of potters, pointed out that "not all who go by the name of potters are subject to the particular diseases of the trade," and that discrimination was necessary in the medical treatment of the different classes of employees. Ramazzini made a curious observation bearing upon the question of eye strain, which has only received qualified consideration within recent years, stating, with reference to potters, that "those who sit at the wheel and form the vessels by turning it about with their feet are apt to have a swimming in the head if their eyes are otherwise weak."

Arlidge, in discussing the effects of mineral dust in the manufacture of pottery before the Sanitary Institute in 1893, remarked at the outset that—

Scarcely any other manufacture has so strong a claim upon the attention of sanitarians as has that of pottery. It stands nearly at the

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head of the list of unhealthy occupations, and exercises its pernicious effects almost wholly upon the respiratory organs, by production of bronchitis and of consumption. Thus it is found that while workmen engaged in other employments have a mortality from chest diseases of 7.86 per cent, potters exhibit one of 12.29 per cent. Likewise with respect to phthisis—nonpotters present one of 9.27 and potters one of 12.90.

After describing the various processes of manufacture and their relation to health-injurious circumstances, Arlidge discussed the relation of silica dust and its irritating effects upon the mucous membrane and epithelium of the lungs, holding the opinion that—

Clinical observation abundantly confirms this fact. For a considerable time the inhaled dust is arrested in its advance toward the lung tissue proper by the mucous secretion in the bronchial tubes, and by the expulsive energy of the cilia lining of those tubes. But at length these resistant forces weaken before the constant entry of fresh dust, and in course of time the noxious material passes into the lymph channels, and also along the finer bronchi, until it reaches the intimate structure and the air cells themselves. Here as a foreign substance it sets up inflammatory action; lymph cells spring up, the air vesicles become choked with inflammatory products, the tissue around them gets indurated (lung sclerosis), and useless as breathing tissue.

The history of these pathological changes is reflected in the symptoms exhibited by the sufferers. In the primary stage little inconvenience is felt; there arises a desire to clear the throat of some impeding mucus at the end of the day's work, or upon transition to the outer air from the warm shop, and especially on rising in the morning. This expulsive act soon develops into a cough, and relief is obtained by the expectoration of more or less blackish viscid mucus. Presently there is a feeling of tightness in the chest, and the breathing grows less free and full. As time goes on these signs of disturbed lung function become more pronounced, and in the end the patient grows asthmatic—a victim of potter's asthma.

Until this advanced stage of disorder is reached, it is singular to notice how little attention and anxiety are bestowed upon the pulmonary derangements. This is because the general health is, for the most part, not seriously affected, and inasmuch as while the sufferer breathes a warm air in his workshop or home, his lung trouble is felt as little more than an annoyance; or as something which is to be taken as a matter of course, and like his wages, as an unavoidable incident of his calling.

As with chronic maladies at large, so with potter's bronchitis and asthma; the tendency is to grow worse and the lung lesion to extend, and soon the damaged respiration reacts upon the whole frame; the sufferer can not get proper outdoor exercise, his appetite fails, his sleep is broken, the expectoration augments and grows muco-purulent, the body wastes slowly, while the increased effort to breathe entails strain upon the heart, leading not infrequently to disease of that organ, with the after consequences in the shape of dropsical effusions.

We now have before us the fully developed disease known as potter's consumption or potter's asthma.

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The injurious effects of silica dust in the pottery industry are materially increased by minute particles of flint, and a further factor injurious to health is the extensive use of plaster of Paris, employed in the making of molds and models. According to Arlidge, the effects of plaster of Paris dust, however, are not apparently as serious as the very destructive effects of silica dust and small particles of flint. He draws attention to the necessity of an efficient system of ventilation as the only means by which material improvements can be brought about.

The health-injurious effects of lead, extensively used in potteries, which do not properly fall within the present discussion, must here be passed over. It is true, of course, that a considerable amount of lead dust is inhaled, but the effects are rather upon the system generally than upon the lungs. The observations of Arlidge are so entirely sustained by other qualified observers that it is not necessary to further enlarge upon the sanitary aspects of this trade. The evidence, statistical or otherwise, is conclusive that potters as a class suffer more, perhaps, from phthisis and other diseases of the lungs than employees in any other occupation, and their mortality from bronchitis and other respiratory diseases is many times as high as the mortality of occupied males generally, but it has been pointed out by Tatham, in his contribution to Oliver's Dangerous Trades, that—

Potters succumb to nontubercular disease of the lungs much more rapidly than they do to tubercular phthisis; and it is certain that much of the so-called potter's phthisis ought properly to be termed cirrhosis of the lung. Deaths from this affection should never be included under the head of phthisis, which term is now restricted, by universal consent, to the tubercular malady of that name.

It is also necessary to keep in mind, in discussing the pottery industry, that it divides itself broadly into two principal departments—that is, first, the making of the articles from potter's clay, and, second, their ornamentation by painting, gilding, etc. The latter group is usually defined as decorators, and sometimes as printers, and because of this fact many errors occur in occupation statistics as the result of erroneous classification—not based upon the industry as such, but upon the specific title of the employment.

One of the most health-injurious employments in the industry is that of the brushing, or dusting off, of the ware after it is taken from the kilns. Oliver, in discussing at length the sanitary aspects of china and earthenware manufacture and in particular potter's asthma and consumption, draws special attention to this process as observed in the porcelain potteries at Limoges. He states that—

The brushing off or époussetage of the fired or biscuited ware is done both by women and men by means of soft feather brushes. It

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is a very dusty operation, and where there are no fans for its removal, as in some of the factories I visited, the air was thick with dust. The windows were open at the time, but currents of air obtained by this means exercised no very appreciable influence upon the dust. It is not this kind of ventilation that is required under these circumstances. In the matter of the provision of artificial means for the removal of dust and the renewal of air in the potteries of Limoges, some of the manufacturers seemed to me to be rather behind than in advance of the owners of large factories in Staffordshire. Accordingly I was not unprepared for the information that among the potters, especially the brushers off or scourers, in Limoges, the mortality from pulmonary consumption and chest diseases is high. The harmful operations in porcelain works are the emptying of the kilns, the removal of the ware from the saggers and the brushing of this ware, while the hard dust that rises during the polishing of the all but finished articles is equally dangerous. The polishing has for its object the removal of any roughness from the edges or surfaces of the ware, and it is generally done on a revolving wheel by means of a broken piece of china, the workman using this as a smoothing agent. The men and women employed in these operations are usually well covered with dust, yet it is seldom that they wear respirators. Fans for the removal of the dust were present in only very few of the factories. The employees objected to them on the ground that they created a strong draft of cold air. Doctor Raymondaud, one of the professors in the School of Medicine, Limoges, has made a special study of the diseases of porcelain makers, particularly of pulmonary consumption and chronic bronchitis. He found that the potteries furnished a larger number of patients suffering from lung diseases than did the other trades of the district. Of 75 deaths registered in Limoges as occurring among china makers, 36 were due to phthisis, and of 30 potters whom Raymondaud examined, 20 were suffering from pulmonary consumption. Pulmonary phthisis is regarded as the principal disease affecting the workers in the Limoges potteries.

The most recent English mortality statistics of potters are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

Between the ages 20 and 35 years the mortality of potters falls below that of occupied and retired males generally; at every other age, however, it shows an excess which amounts to no less than 74 per cent at ages 45 to 55 years, and to 66 per cent at ages 55 to 65 years. In the main working time of life the comparative mortality figure is 1,493, or 49 per cent above the standard. The principal excess falls under the head of respiratory diseases, for which the mortality figure is 473, or nearly thrice the standard. There is also a considerable excess in the mortality from phthisis, from nervous and circulatory diseases, and from suicide. These workers are also specially liable to lead poisoning, but from accident as well as from influenza, Bright's disease, and alcoholism their mortality is low.

In the last decennial supplement the mortality of potters was described as enormous. From the present report, however, it will be seen that since 1890–1892 their mortality has declined at every stage

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of life; and in the main working period the comparative mortality figure has fallen from 1,970 to 1,420, or by no less than 28 per cent. It is satisfactory to note that in the recent period the mortality of potters from plumbism has fallen to less than half its former amount, while there has also been a substantial decline under most other headings; the mortality from respiratory and urinary diseases having fallen by about one-third, that from phthisis, nervous and digestive diseases by about one-fourth, and that from circulatory diseases by about one-fifth part. Potters, however, now fall victims in increased proportion to accident, and to suicide, and the mortality from cancer has increased by more than half. Since 1860, 61, 71 the death rates of potters both above and below 45 years of age have fluctuated somewhat, but the recent modified mortality figure is by far the lowest on record. Since 1880–1882 there has been a continuous decline of mortality from phthisis, from liver disease, and from diseases of the nervous and digestive systems.

The English statistics for potters are quite conclusive of the unfavorable effects of this industry on health. In the table which follows the mortality from all causes among potters is compared with that of occupied males generally, and the result is decidedly suggestive of conditions more or less unfavorable to life and health, but in particular at ages 35 or over, when the mortality rate from all causes exceeds by from 4.30 to 29.86 per 1,000 the corresponding mortality of occupied males generally.

MORTALITY FROM ALL CAUSES AMONG POTTERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate among potters.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.62	+ 0.18	107
20 to 24 years	4.41	3.68	− .73	83
25 to 34 years	6.01	5.26	− .75	88
35 to 44 years	10.22	14.52	+ 4.30	142
45 to 54 years	17.73	31.64	+13.91	178
55 to 64 years	31.01	54.15	+23.14	175
65 years or over	88.39	118.25	+29.86	134

The preceding table is self-explanatory and requires no further comment. A more extended comparison, however, is made in the next table, in which the mortality of potters from consumption and from other diseases of the respiratory system is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that the mortality from consumption among potters is decidedly excessive at ages 35 to 64 by 1.05 to 4.10 per 1,000. Still more marked is the excess in the mortality from respira-

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tory diseases other than consumption among potters at ages 35 or over, which varies from 1.63 to 17.27 per 1,000. The table which follows requires no further comment and is otherwise self-explanatory:

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG POTTERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for potters.			Death rate per 1,000 for all occupied males.	Death rate for potters.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.54	0.62	+0.08	115	0.24	0.46	+ 0.22	192
20 to 24 years.....	1.55	1.34	− .21	86	.48	.58	+ .10	121
25 to 34 years.....	2.03	2.00	− .03	99	.77	.64	− .13	83
35 to 44 years.....	2.74	3.79	+1.05	138	1.66	3.29	+ 1.63	198
45 to 54 years.....	3.04	7.14	+4.10	235	3.32	10.78	+ 7.46	325
55 to 64 years.....	2.16	4.37	+2.21	202	6.54	23.10	+16.56	353
65 years or over...	1.11	.97	− .14	.87	17.77	35.04	+17.27	197

With further reference, however, to the excessive mortality from respiratory diseases among potters, which, as subsequently to be shown, is confirmed by industrial insurance mortality experience, reference may be made to the discussion of the occurrence of potters' asthma, in the Report of the Departmental Committee on Industrial Diseases. The evidence submitted to the committee disclosed a decided improvement in the disease liability of potters to the fibroid form of phthisis, based upon the records of the North Staffordshire Infirmary, at Stoke-upon-Trent, covering the period 1873–1906. Upon a basis of 10,000 patients, the number of cases of fibrosis of the lungs was found to have been 145 during the six years ending with 1878, 107 during the six years ending with 1897, and only 4 during the six years ending with 1906.(a) In the opinion of a qualified medical witness, the diminution was not the result of a difference in the practice of diagnosing, but a real reduction in the prevalence of the disease. The improvement in the disease liability was attributed to a betterment in the conditions of work and a more effective method of factory supervision, inspection, and control. Aside from these favorable conclusions, however, the general mortality statistics of this trade indicate continued unfavorable circum-

[a] Minutes of Evidence, Departmental Committee on Compensation for Industrial Diseases, p. 60.

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stances, reflected in the decidedly excessive degree of consumption frequency and a correspondingly excessive mortality from other respiratory diseases in the more advanced years of life.

The recorded industrial insurance mortality statistics of potters include 384 deaths from all causes, of which 127 or 33.1 per cent were deaths from consumption. Of the mortality of potters from respiratory diseases other than consumption, 21 were deaths from pneumonia, 18 from asthma, 12 from bronchitis, and 6 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 47.9 per cent of the mortality of potters was found to be from diseases of the lungs and air passages. The excess in the consumption mortality of potters is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes, 52.9 were from consumption, against an expected normal proportion of 31.3. The analysis in detail of the consumption mortality of potters is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG POTTERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for potters from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of potters, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Potters.	Males in registration area, 1900 to 1906.
15 to 24 years	46	11	23.9	27.8
25 to 34 years	68	36	52.9	31.3
35 to 44 years	84	37	44.0	23.6
45 to 54 years	78	22	28.2	15.0
55 to 64 years	72	14	19.4	8.1
65 years or over	36	7	19.4	2.7
Total	384	127	33.1	14.8

Since potters are liable to an excessive mortality not only from consumption, but also from respiratory diseases generally, the analysis of the industrial insurance mortality experience has been extended to respiratory diseases other than consumption, and the number of deaths from such diseases, by divisional periods of life.

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PROPORTIONATE MORTALITY FROM DISEASES OF THE RESPIRATORY SYSTEM OTHER THAN CONSUMPTION AMONG POTTERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for potters from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of potters, 1897 to 1906, due to—		Per cent of deaths due to respiratory diseases other than consumption among—	
	All causes.	Respiratory diseases other than consumption.	Potters.	Males in registration area, 1900 to 1906.
15 to 24 years	46	1	2.2	9.7
25 to 34 years	68	8	11.8	10.9
35 to 44 years	84	10	11.9	12.5
45 to 54 years	78	18	23.1	12.6
55 to 64 years	72	17	23.6	12.2
65 years or over	36	1	2.8	11.6
Total	384	a 57	14.8	11.8

a Including 2, age unknown.

While respiratory diseases have been grouped for purpose of convenience, and on account of the comparatively small number of deaths under consideration, the returns in detail disclose the fact that it is particularly in the number of deaths from asthma that potters experience a higher mortality than occupied males generally.

In summarizing these rather extended observations and statistical data, including insurance mortality experience, the conclusion is confirmed that potters as a class are decidedly subject to a high mortality from consumption and from respiratory diseases other than consumption.

CEMENT WORKERS.

The health-injurious conditions of cement-making processes are quite well understood, being on the one hand the dust, and on the other hand noxious vapors arising through the process of burning. The vapors are probably more obnoxious than injurious, but the subject attracted sufficient attention to suggest an investigation by the Royal Commission on Noxious Vapors, in 1878. As a result of the vapors and the dust generated during the processes, cement works, as a rule, are located outside of large cities.

The health conditions in cement works have never been fully investigated, but it appears to be the consensus of opinion that the effects are not as serious as assumed upon the facts of a casual inspection. Fatal accidents have occurred as the result of asphyxiation by carbon-monoxide gas, but such cases are very rare. Cases of gassing, so-called, which do not terminate fatally, are comparatively common. Arlidge considered the employment of cement making at some length,

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pointing out that the workmen are exposed to dust in an intense form, but the experience would seem to prove that the effect on health is not as serious as expected. He states that the raw materials of cement are clay with flint and lime, and he briefly describes the process of manufacture as follows:

After the materials have been well mixed and ground together in a sort of mortar mill to the consistency of liquid mud, the next business is to drive off the water by heat, and then to subject the dried substance in tins to a still higher temperature. Later all the cement is withdrawn and then ground between rollers to the requisite fineness. The primary mixing and grinding, being done with a free supply of water, exhibits no unsanitary conditions. In working the kilns the workmen suffer from great heat and dust, but the most continuous dusty work is in the mill, the air of which is clouded with cement. Inquiry among the workmen elicited the fact that after a while they become short of breath and suffer cough, though not in a high degree, and that on arising in the morning they had to clear their chests by expectorating viscid mucus containing cement dust.

The amount of dust generated in cement-making processes is enormous. The workmen take practically no precaution to avoid this dust, and considerable quantities are of necessity inhaled. It is very rare to find employees who use a respirator or even a piece of ordinary cloth to provide some protection against the health-injurious conditions which surround them. The conditions are probably at their worst in the sacking or packing department, where such precautions are occasionally adopted. Every department, however, is filled with dust, and the avoidance of its inhalation by the majority of employees is under present methods practically impossible. The disease problem is complicated by a high degree of temperature in some of the departments, in particular at the kilns. While many descriptive accounts of the industry have been published, the hygiene of the occupation has been practically ignored. Tracy refers to it very briefly, holding that "the workmen who make Portland cement are greatly troubled by the dust, caused by shoveling the mass into sacks after it has been burned and ground. They have a persistent cough, and expectorate little lumps of cement. They find it impossible to continue this part of their labor day after day, and are obliged to take intervals of rest."

Parry, in his treatise on The Risks and Dangers of Various Occupations, refers to cement workers as follows:

Those engaged in the manufacture and use of Portland cement are very liable to get the dust into their lungs. Portland cement is made from some substance containing carbonate of lime, such as white chalk, existing in such immense quantities in this country, and some material containing silica and alumina, such as a selected clay,

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or alluvial mud. These are ground together with water to a muddy consistency, which is then dried by heating in chambers. This being a wet process no dust is raised, but during the next stage, the digging out of the cement, a great deal of dust is created. The material raised is then calcined, ground between rollers, and finally packed in bags. In the last two operations, the grinding and packing, much dust is also scattered. The particles are of a sharp, irritating character, and therefore dangerous.

In Oliver's Dangerous Trades, the manufacture of cement from a hygienic point of view is briefly discussed and illustrated by a microphotograph of cement dust by Migerka. Oliver's description is as follows:

Under the microscope are seen a few sharp-edged little plates and amorphous masses like small clumps. The particles are not of themselves so dangerous as might at first sight appear. Although cement workers suffer from pulmonary disease, they do not do so to the great extent that might be expected. Probably the harmful effects are largely due to the hygroscopic character of the particles and their alkaline reaction.

There are no official vital statistics of this employment for the United States or for England and Wales. The recorded industrial insurance mortality statistics of cement workers include only 88 deaths from all causes, of which 17, or 19.3 per cent, were deaths from consumption. Of the mortality of cement workers from other respiratory diseases, 5 were from pneumonia and 3 from other diseases of that class. If the deaths from consumption and from other respiratory diseases are combined, it is found that 28.4 per cent of the mortality of cement workers was from diseases of the lungs and air passages. The excess in the consumption mortality of cement workers is more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG CEMENT WORKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for cement workers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of cement workers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Cement workers.	Males in registration area, 1900 to 1906.
15 to 24 years	10	1	10.0	27.8
25 to 34 years	12	3	25.0	31.3
35 to 44 years	19	4	21.1	23.6
45 to 54 years	15	6	40.0	15.0
55 to 64 years	19	3	15.8	8.1
65 years or over	13	.....	.....	2.7
Total	88	17	19.3	14.8

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The foregoing observations confirm the conclusion that cement makers as a class are subject to conditions more or less injurious to health, but the evidence is as yet inconclusive that these conditions predispose to an excessive mortality from consumption.(a)

PLASTERERS.

The building trades are all more or less exposed to the inhalation of mineral dust, the injurious effects of which are probably most severe in the case of plasterers, masons, and allied occupations. This group of occupations is not clearly defined, since many plasterers are also masons, or bricklayers, while others are whitewashers or paper hangers. The English vital statistics combine plasterers, whitewashers, and paper hangers.

The health conditions in this trade were commented upon by Ramazzini, who, in the quaint language of the day, states that "Lime and Plaister are likewise offensive to those who burn them or handle them, or sell them," and he continues: "I have frequently observed that those who boil, prepare, grind, sift, or sell it, do usually labor under a difficulty of breathing." As a safeguard, Ramazzini points out that: "Though such workmen have a cover for their mouth, they can not avoid receiving the flying particles at the mouth and nose, upon which these particles enter the passages of respiration and mix with the lymph, rise up in hard, chalky concretions, or by daubing the winding passages of the lungs intercept freedom of breath. I found," he observes, "that such as continued in this business did die asthmatic and cachetik." He refers also to a still earlier author, Morton, who connected the inhalation of the dust with consumption of the lungs. He concludes his observations with the statement that: "Care must be taken to observe the caution laid down above, with intent to guard the mouth as much as possible from receiving the offensive particles." All this was written more than two hundred years ago.

(a) How widely qualified opinions differ with regard to the health-injurious effects of mineral dust derived from lime and cement is made evident by the following quotation from the Journal of the American Medical Association, December 12, 1908:

Selkirk has investigated a general opinion among lime workers that they are exceptionally free from bronchitis and pulmonary tuberculosis. He was unable to find an instance of phthisis among them, nor could he learn on inquiry of any worker in limekilns having died from tuberculosis. He asks whether those who inhale and swallow much lime are abnormally free from tuberculosis of the lungs. He discusses what is known of the therapeutics of calcium salts, and says it appears that the continued absorption of calcium from the lungs and intestines might maintain an abnormally high percentage of it in the blood. He suggests that the workingman predisposed to tuberculosis might turn his attention to lime and cement working as an occupation, and even hints at the organization of lime works as a curative tuberculosis colony. A rapid increase of weight is commonly observed in new workers at the Warren Cement Works at Hartlepool.

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Thackrah, writing in 1832, took a more favorable view of the employment, holding that bricklayers and their laborers, while particularly exposed to lime dust, suffered from diseases of the eye and cutaneous eruptions, but not from internal disease, and he quotes an adage common to the workmen in the trade of the period, that "bricklayers and plasterers' laborers, like asses, never die." Regarding plasterers and whitewashers, who are also exposed to lime dust, he states: "They suffer from no sensible injury," and that "they are more pallid and less robust than bricklayers." Thackrah, however, did not sustain his observations by trustworthy data.

In Rhode Island during the ten years ending with 1906, the number of recorded deaths of plasterers from all causes was 25, and of this number 5, or 20 per cent, were from consumption, and 4, or 16 per cent, from other respiratory diseases. Of the total mortality 9, or 36 per cent, were from diseases of the lungs and air passages.

The most recent English mortality statistics of plasterers and paper hangers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

> Between the ages of 35 and 65 years the death rate in this industry exceeds the standard for occupied and retired males, while at ages outside these limits the rates are below it. In the main working period of life the comparative mortality figure is 1,018, or within 1 per cent of the standard. The mortality from alcoholism and liver disease, from phthisis, from respiratory diseases, and from cancer, slightly exceeds the standard, and except that these workers appear to suffer but little from influenza, the figures for other diseases agree closely with the average.

The English occupation mortality statistics for plasterers are somewhat impaired in value by the fact that paper hangers and whitewashers are combined with this occupation, but the statistics may safely be accepted as indicating with approximate accuracy the specific disease liability of men in this employment to consumption and respiratory diseases. In the table which follows the mortality from all causes among men in this group is compared with that of occupied males generally, and the result is rather suggestive of conditions in this trade more or less unfavorable to life and health. The excess in the general mortality is most marked at ages 35 to 64, when the death rate of plasterers from all causes exceeds the mortality of occupied males generally by from 1.30 to 1.52 per 1,000. The mortality of plasterers, however, is below the average at ages under 35, and at 65 years or over.

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MORTALITY FROM ALL CAUSES AMONG **PLASTERERS, PAPER HANGERS, AND WHITEWASHERS,** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for plasterers, paper hangers, and whitewashers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	1.52	− 0.92	62
20 to 24 years	4.41	3.44	− .97	78
25 to 34 years	6.01	4.07	− 1.94	68
35 to 44 years	10.22	11.52	+ 1.30	113
45 to 54 years	17.73	19.18	+ 1.45	108
55 to 64 years	31.01	32.53	+ 1.52	105
65 years or over	88.39	72.18	−16.21	82

The preceding table is self-explanatory and requires no further comment, except that it confirms the view that the health-injurious effects of this employment are not as pronounced as in many other dusty trades, but in particular such occupations as stonecutting, pottery manufacture, glass blowing, etc. In the table which follows the mortality of plasterers from consumption is compared with the normal mortality of occupied males from this disease by divisional periods of life. The comparison shows that the mortality from consumption is above the normal at ages 35 or over, but it is only at ages terers is set forth in detail in the table below:

MORTALITY FROM CONSUMPTION AMONG **PLASTERERS, PAPER HANGERS, AND WHITEWASHERS,** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for plasterers, paper hangers, and whitewashers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.41	−0.13	76
20 to 24 years	1.55	1.06	− .49	68
25 to 34 years	2.03	1.22	− .81	60
35 to 44 years	2.74	3.98	+1.24	145
45 to 54 years	3.04	3.62	+ .58	119
55 to 64 years	2.16	4.01	+1.85	186
65 years or over	1.11	1.53	+ .42	138

The recorded industrial insurance mortality statistics of plasterers include 577 deaths from all causes, of which 136, or 23.6 per cent, were

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from consumption. Of the mortality of plasterers from respiratory diseases other than consumption, 67 were from pneumonia, 5 from asthma, 14 from bronchitis, and 7 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 39.7 per cent of the mortality of plasterers was from diseases of the lungs and air passages. The excess in the consumption mortality of plasterers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages under 65, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 44.9 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of plasterers is set forth in detail in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **PLASTERERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for plasterers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of plasterers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Plasterers.	Males in registration area, 1900 to 1906.
15 to 24 years	25	7	28.0	27.8
25 to 34 years	78	35	44.9	31.3
35 to 44 years	107	38	35.5	23.6
45 to 54 years	127	35	27.6	15.0
55 to 64 years	121	16	13.2	8.1
65 years or over	119	5	4.2	2.7
Total	577	136	23.6	14.8

The preceding observations and statistical data, including the industrial insurance mortality experience of this occupation, would seem to confirm the conclusion that this employment is injurious to health, and that the degree of consumption frequency is above the average at all ages under 65, and decidedly so at ages 25 to 34.

PAPER HANGERS.

Paper hangers, equally with plasterers, are exposed to a considerable risk of mixed-dust inhalation, chiefly of mineral origin. During the operation of removing old wall paper from the walls a large amount of dust is created, against which practically no precautions are taken and no effort is made to reduce the dust to a minimum. Since wall paper often, if not as a rule, contains colored pigments more or less injurious to health and occasionally poisonous metallic

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substances, such as arsenic, there is an additional risk to health from this source which occasionally has assumed serious proportions. It would seem that a rational health administration should intervene to compel a previous disinfection of premises in which consumptives have died before the same are permitted to be redecorated by plasterers or paper hangers.

In Rhode Island during the 10 years ending with 1906 the number of recorded deaths of paper hangers from all causes was only 14, but of these 3, or 21.4 per cent, were from consumption, and 3, or 21.4 per cent, from other respiratory diseases. Of the total recorded mortality 6, or 42.8 per cent, were from diseases of the lungs and air passages.

The recorded industrial insurance mortality statistics of paper hangers include 319 deaths from all causes, of which 107, or 33.5 per cent, were from consumption. Of the deaths of paper hangers from other respiratory diseases, 30 were from pneumonia and 8 from other diseases of this class. The mortality of paper hangers from consumption was excessive at ages 15 to 44, but most so at ages 35 to 44, when of the deaths from all causes 44.6 per cent were from this disease, against a normal expected proportion of 23.6. The following table analyzes the consumption mortality of paper hangers:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG PAPER HANGERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for paper hangers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of paper hangers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Paper hangers.	Males in registration area, 1900 to 1906.
15 to 24 years	33	14	42.4	27.8
25 to 34 years	96	47	49.0	31.3
35 to 44 years	74	33	44.6	23.6
45 to 54 years	55	8	14.5	15.0
55 to 64 years	34	4	11.8	8.1
65 years or over	27	1	3.7	2.7
Total	319	107	33.5	14.3

There are no official vital statistics of paper hangers as a class separate and distinct from plasterers and similar occupations, and the only source of accurate information regarding the degree of consumption frequency among men in this employment is the industrial insurance mortality statistics, briefly referred to above.

When the insurance mortality statistics of paper hangers are compared with those of plasterers, the statistical evidence appears to be

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conclusive that the degree of consumption frequency among paper hangers is decidedly higher than the corresponding degree of consumption frequency among plasterers. While at all ages the proportion of deaths from consumption was 23.6 per cent for plasterers, it was 33.5 for paper hangers; at ages 15 to 24 the respective consumption percentages were 28.0 for plasterers against 42.4 for paper hangers; at 25 to 34, 44.9 per cent for plasterers and 49.0 per cent for paper hangers; at 35 to 44, 35.5 per cent for plasterers against 44.6 per cent for paper hangers. At ages 45 or over the percentages were more favorable to paper hangers than to plasterers.

Summarizing the rather limited amount of statistical information regarding the mortality of paper hangers, the available data would seem to warrant the conclusion that the degree of consumption frequency in this occupation is decidedly excessive at ages under 45 when comparison is made with occupied males generally and the occupation of plasterers in particular.

FOUNDRYMEN AND MOLDERS.

Foundrymen and molders are to a very considerable degree exposed to the continuous inhalation of both metallic and mineral dusts. While the proportion of metallic dust is quantitatively small, it is probably the more injurious of the two, although its effects are modified by the relatively much larger amount of mineral dust. The industry is varied, of large extent, and widely distributed throughout the country. The conditions affecting health naturally vary, and chiefly so on account of the metal used in casting, which may be iron, steel, brass, etc. The employments in foundry practice are chiefly those of molders and clay mixers, of which molders, again, are subdivided into those who work at a bench, or in the making of small ware, and those who work on the floor or in the pits in the making of castings of larger size. Within recent years labor-saving appliances have been extensively introduced into the large foundries, chiefly in connection with iron and steel works, but corresponding progress has not been made in the smaller establishments. The introduction of machinery has led to the employment of much unskilled labor of low grade, which complicates the value of the available mortality returns. It is also necessary to take into consideration the not inconsiderable accident liability of men employed in foundries, and the occasional or general exposure to extreme heat and the liability to overstrain inseparable from the lifting of heavy weights of metal.

An investigation into the sanitary aspects of this employment made by the state board of health of Massachusetts disclosed the fact that at fourteen foundries in which castings of all kinds were made, in seven the conditions as to light, ventilation, and dust removal were

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very poor. Of nine stove foundries inspected, four presented moderately bad and one distinctly bad conditions affecting the health of employees. In the polishing room of one factory, conducted under almost ideal conditions, the emery wheels were well equipped with hoods and exhaust ventilators, but the report states that "the men, unmindful of the protection provided, habitually remove the hoods, and become covered with emery and iron particles."

In reporting in some detail upon the establishments found to be more or less unsatisfactory as to light, ventilation, and dust removal, the report states that one shop "employs 275 men, in low-studded, poorly lighted, unventilated buildings, in which there is no attempt to remove the dust arising from the processes of polishing and buffing by hoods and exhaust ventilation. In the tumbling room the dust is so thick that objects a few feet distant can not clearly be made out. Many men refuse to work in this establishment in the hot months, on account of the excessive heat and general discomfort."

The vital statistics of this group of employments are not conclusive. In Rhode Island 157 deaths of molders have been recorded during the period 1897 to 1906, and of this number 31, or 19.7 per cent, were from consumption, 21 were from pneumonia, and 4 were from asthma and bronchitis, a total of 35.6 per cent of the mortality from all causes from diseases of the lungs and air passages. Respiratory diseases other than consumption are shown to have been of about the same degree of relative frequency as consumption.

The high mortality of foundrymen and molders from consumption observed to occur at advanced ages is decidedly suggestive. Evidently the progress of the disease in these occupations is slow, and often, if not as a rule, assumes the form of fibroid phthisis. There can be no question of doubt that there is in these occupations an intimate connection between the continuous exposure to metallic and mineral dust inhalation and the relative frequency of the disease. Considering the nature of the dust inhaled, this is what would be expected. The dust being largely mineral, but partly metallic, the proportion of iron dust, while quite considerable, is not so great in quantity as the iron dust inhaled by men engaged in cutlery grinding or file cutting. No doubt many of the dangers of the employment could be guarded against by attention to safety devices, chiefly respirators, to be worn during the actual mold-making processes. The employment, by its very nature, however, precludes very radical methods of dust prevention, and the most effective safeguard would be short hours of labor and a rational use of spare hours and vacations.

There are no official vital statistics of these occupations either for the United States or for England and Wales. The recorded industrial insurance mortality statistics of foundrymen and molders are very extensive and include 1,397 deaths from all causes, of which 311,

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or 22.3 per cent, were from consumption. Of the deaths of foundrymen and molders from respiratory diseases other than consumption, 14 were from asthma, 21 from bronchitis, 211 from pneumonia, and 31 from other diseases of this class. If the deaths from consumption and from other respiratory diseases are combined, 42.1 per cent of the mortality of foundrymen and molders was from diseases of the lungs and air passages. The mortality of foundrymen and molders was excessive at all ages over 25, but the excess was most pronounced at ages 25 to 34, when out of every 100 deaths of foundrymen from all causes, 40.4 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of foundrymen and molders in detail is set forth in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG FOUNDRYMEN AND MOLDERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for foundrymen and molders from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of foundrymen and molders, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Foundrymen and molders.	Males in registration area, 1900 to 1906.
15 to 24 years	122	29	23.8	27.8
25 to 34 years	228	92	40.4	31.3
35 to 44 years	300	82	27.3	23.6
45 to 54 years	292	65	22.3	15.0
55 to 64 years	239	27	11.3	8.1
65 years or over	216	16	7.4	2.7
Total	1,397	311	22.3	14.8

The preceding observations and statistical data, derived chiefly from industrial insurance mortality experience, seem to confirm the conclusion that this employment is more or less injurious to health, and that the degree of consumption frequency is excessive at ages 25 or over.

CORE MAKERS.

Core making is an essential branch of foundry practice. The occupation gives employment to a considerable number of young persons, mostly boys, but of late years girls have been drawn into the trade, although it is held that the more arduous duties and surrounding conditions of the occupation are unsuited to the female sex. No qualified investigation appears to have been made into the health conditions of this employment, but in a general way the conditions approximate those of foundry practice in general. There is a considerable exposure to both mineral and metallic dust, but the fact that large numbers follow this occupation for only a comparatively short time no

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doubt prevents the more serious results which would follow if the exposure were continued for many years.

There are no official vital statistics of these occupations either for the United States or for England and Wales. The recorded industrial insurance mortality statistics of core makers include 162 deaths from all causes, of which 48, or 29.6 per cent, were from consumption. Of the mortality of core makers from respiratory diseases other than consumption, 24 were from pneumonia and 4 were from other diseases in this group. If the deaths from consumption and from other respiratory diseases are combined, 46.9 per cent of the mortality of core makers was from diseases of the lungs and air passages. The excess in the mortality from consumption falls almost exclusively upon ages under 45, since comparatively few deaths have occurred at ages 45 or over. The analysis of the consumption mortality of core makers is set forth in detail in tabular form below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG CORE MAKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for core makers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of United States census.]

Age at death.	Deaths of core makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Core makers.	Males in registration area, 1900 to 1906.
15 to 24 years	66	20	30.3	27.8
25 to 34 years	42	17	40.5	31.3
35 to 44 years	25	9	36.0	23.6
45 to 54 years	9	1	11.1	15.0
55 to 64 years	9	1	11.1	8.1
65 years or over	11	.....	.....	2.7
Total	162	48	29.6	14.8

While statistical information regarding persons employed as core makers is very limited, the evidence is entirely conclusive that the degree of consumption frequency in this occupation is decidedly excessive at ages 15 to 44, inclusive.

LITHOGRAPHERS.

Lithographers constitute an important branch of the printing trade. In the census reports lithographers are included in the occupation statistics of printers and pressmen, so that the actual number of lithographers in the United States is not known. For hygienic reasons the employment of the lithographer requires to be considered separately from printing and engraving, since in the former the exposure is chiefly to mineral dust, while the latter are exposed primarily to the inhalation of metallic dust. Lithographic stone has

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been defined as a fine, compact homogeneous limestone, practically all of which is imported from Germany. The small amount of lithographic stone quarried in the United States varies in its mineral and metallic constituents from the Bavarian stone, containing nearly 7 per cent of magnesia. No accurate observations have been made a matter of record to determine the degree of possible lung injury resulting in the case of the lithographer's occupation, but it is safe to assume that the employment requires to be included in the group of dusty trades. This conclusion is fully sustained by a knowledge of the technical processes which constitute the lithographic art.

The sanitary conditions of this employment received consideration by Sir John Simon in his report as medical officer of the privy council. Simon called attention to the dust resulting from the use of colors and pigments, against the inhalation of which only very few of the workmen had adopted intelligent precautions. The most pernicious of the mineral colors employed in connection with lithography were emerald green and bronze. Simon did not connect the inhalation of this dust with the occurrence of phthisis, but the inference would seem warranted that such a connection exists, at least in exceptional cases.

Parry, in his treatise on Risks and Dangers of Various Occupations, confirms this earlier opinion, and holds that in lithographing green arsenical pigments are used, the poisonous dust of which is inhaled and conveyed to the stomach. It is evident that the poisonous character of the colors or pigments is a more serious factor than the less injurious dust of the stone itself, but how far either form of dust increases the liability to consumption has not been determined.

The most recent English mortality statistics of lithographers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General (p. lix) in part as follows:

> At all ages except 20 to 25 and 45 to 55 the death rates among these workers exceed the standard for all occupied and retired males. These workers experience a lower mortality than printers up to the age of 45, but beyond that age the mortality in the two occupations differs but slightly. In the main working period of life the comparative mortality figure of lithographers is 964, or 4 per cent, below the average. Their mortality from influenza and phthisis considerably exceeds the standard, while that from respiratory diseases is below it by about an equal amount.

The English mortality statistics for lithographers are rather inconclusive as to a decidedly unfavorable effect of this industry on health, and while in the table which follows a comparison is made of the mortality from all causes of men in this group with occupied males generally, the death rates are, as a rule, below the average for occupied males generally except at ages 20 to 24 and 45 to 54, inclusive.

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MORTALITY FROM ALL CAUSES OF **LITHOGRAPHERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for lithographers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	1.55	−0.89	64
20 to 24 years	4.41	5.36	+ .95	122
25 to 34 years	6.01	5.62	− .39	94
35 to 44 years	10.22	8.41	−1.81	82
45 to 54 years	17.73	19.94	+2.21	112
55 to 64 years	31.01	30.84	− .17	99
65 years or over	88.39	82.25	−6.14	93

The preceding table is self-explanatory and requires no further comment, but a more extended comparison, however, is made in the next table, in which the mortality of lithographers from consumption is compared with the normal mortality of occupied males from this disease, by divisional periods of life. This table shows that the mortality of lithographers from consumption was above the average at all ages by from 0.23 to 2.17 per 1,000. The excess is not very marked and does not warrant decidedly unfavorable conclusions. The table which follows requires no further comment and is otherwise self-explanatory.

MORTALITY FROM CONSUMPTION AMONG **LITHOGRAPHERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for lithographers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.77	+0.23	143
20 to 24 years	1.55	2.68	+1.13	173
25 to 34 years	2.03	2.70	+ .67	133
35 to 44 years	2.74	3.13	+ .39	114
45 to 54 years	3.04	4.27	+1.23	140
55 to 64 years	2.16	4.33	+2.17	200
65 years or over	1.11	1.44	+ .33	130

The recorded industrial insurance mortality statistics of lithographers include 160 deaths from all causes, of which 70, or 43.8 per cent, were from consumption. Of the mortality of lithographers from respiratory diseases other than consumption, 3 were from

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18 from pneumonia, and 1 from another disease of this class. If the deaths from consumption and from other respiratory diseases are combined, 57.5 per cent of the mortality of lithographers was from diseases of the lungs and air passages. The number of deaths of lithographers included in this analysis is sufficiently large to warrant a more definite conclusion than the corresponding general vital statistics of this occupation for England and Wales. The excess in the consumption mortality of lithographers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease, by divisional periods of life. The comparison shows that the consumption mortality was excessive at all ages under 65, but decidedly so at ages 15 to 34. At 15 to 24 the proportion of deaths from consumption among lithographers was 56.8 per cent against a normal expected proportion of 27.8, while at ages 25 to 34 the proportionate consumption percentage was 62.2 for lithographers against a normal expected proportion of 31.3. The analysis of the consumption mortality of lithographers is set forth in detail in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG LITHOGRAPHERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for lithographers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of lithographers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Lithographers.	Males in registration area, 1900 to 1906.
15 to 24 years	37	21	56.8	27.8
25 to 34 years	45	28	62.2	31.3
35 to 44 years	29	13	44.8	23.6
45 to 54 years	21	5	23.8	15.6
55 to 64 years	18	3	16.7	8.1
65 years or over	10	.....	.....	2.7
Total	160	70	43.8	14.8

The preceding observations and statistical data confirm the conclusion that lithographers as a class are subject to an excessive mortality from consumption, but in particular at ages 15 to 44, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

SUMMARY OF CONCLUSIONS REGARDING OCCUPATIONS WITH EXPOSURE TO MINERAL DUST.

In the foregoing observations and statistical data twelve occupations, involving exposure to mineral dust, have been considered in

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detail. As stated in the summary of conclusions regarding occupations with exposure to metallic dust, it is not possible in all cases to base conclusions upon identical data, as official vital statistics are not available for some of the occupations here considered. The census returns of 1900 give the age distribution of marble and stone cutters, glass workers, potters, plasterers, and paper hangers, the aggregate number of such persons being 168,404. This number is exclusive of persons under 15 and of unknown ages. The statistics show that only 4,409, or 2.6 per cent, had attained to an age of 65 years or over, against a normal expected proportion of 4.7. This fact in itself is decidedly suggestive of conditions more or less unfavorable to health and life in occupations exposing to mineral dust. The details of the age distribution are given in the following table by divisional periods of life, together with the corresponding distribution of all occupied males, the data for both groups being derived from the census of 1900.

NUMBER AND PER CENT OF MALES IN EACH AGE GROUP IN OCCUPATIONS EXPOSED TO MINERAL DUST, COMPARED WITH NUMBER AND PER CENT IN ALL OCCUPATIONS IN THE UNITED STATES, 1900.

[From report of the Bureau of the Census on Occupations, 1900.]

Age.	Males in occupations exposed to mineral dust.		All occupied males.	
	Number.	Per cent.	Number.	Per cent.
15 to 24 years	40,454	24.0	5,933,720	26.0
25 to 34 years	49,987	29.7	5,903,847	26.3
35 to 44 years	38,253	22.7	4,704,682	20.6
45 to 54 years	24,784	14.7	3,250,259	14.3
55 to 64 years	10,517	6.3	1,856,181	8.1
65 years or over	4,409	2.6	1,053,856	4.7
Total	168,404	100.0	22,802,545	100.0

According to this analysis, the proportion of persons aged 15 to 34 was 53.7, or more than half of the total, against 52.3 expected. At ages 35 to 44 the proportion was 22.7 for the group under consideration, against 20.6 among occupied males generally. At ages 45 or over the proportion of persons employed in occupations with exposure to mineral dust was only 23.6, against 27.1 for occupied males generally. In some of the trades included in this group a considerable amount of muscular labor is involved, and this is especially true of glass blowers and certain occupations in the pottery industry. It is, doubtless, for this reason that the age distribution in this group of employments conforms somewhat more to that of all occupied males than was true of the occupations in the group exposed to metallic dust.

It is possible to present a combined summary of the United States census vital statistics of persons employed as marble and stone

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cutters, glass workers, and plasterers. A comparison of the death rates in these combined occupations with the corresponding death rates of occupied males generally is very suggestive of unfavorable health conditions in occupations exposed to mineral dust. These unfavorable health conditions manifest themselves in an increased mortality at all ages above 25, while at ages 15 to 24 the mortality rate from all causes is slightly more favorable for the occupations in this group than for occupied males generally. The number of deaths, however, in the earlier age groups is too small to warrant final conclusions. At ages 25 to 44 the death rate from all causes in the occupations of this group was 9.88, against 8.78 expected; at ages 45 to 64 the death rate in the group under consideration was 24.04, against 19.91 expected; and at ages 65 or over the rate was 106.87, against 98.44 expected. The death rate from consumption was 4.87 per 1,000, against 2.37 expected, and the death rate from other respiratory diseases was 1.99, against 1.97 expected. The details of the mortality by ages are given in the following table, together with the corresponding death rates for all occupied males, the data for both groups being derived from the census of 1900:

MORTALITY FROM ALL CAUSES AMONG MALES IN OCCUPATIONS EXPOSED TO MINERAL DUST IN THE REGISTRATION STATES, COMPARED WITH THAT OF ALL OCCUPIED MALES IN THOSE STATES, 1900, BY AGE GROUPS.

[From report of the Bureau of the Census on Vital Statistics, 1900.]

Age.	Males in occupations exposed to mineral dust.			All occupied males.		
	Number employed.	Number of deaths from all causes.	Rate per 1,000 from all causes.	Number employed.	Number of deaths from all causes.	Rate per 1,000 from all causes.
15 to 24 years	8,724	39	4.47	1,259,471	6,486	5.15
25 to 44 years	24,506	242	9.88	2,680,241	23,541	8.78
45 to 64 years	9,899	238	24.04	1,282,259	25,532	19.91
65 years or over	1,179	126	106.87	283,310	27,888	98.44
Total	44,308	645	[a] 14.56	5,505,281	83,447	[b] 15.16

[a] From consumption there were 216 deaths, or a rate of 4.87; from other diseases of the respiratory system there were 88 deaths, or a rate of 1.99.
[b] The rate of mortality from consumption was 2.37; from other diseases of the respiratory system 1.97.

The occupation mortality statistics of Rhode Island are available for four specific occupations of this group and when combined return 321 deaths from all causes, of which 79 were from consumption and 53 from respiratory diseases other than consumption. The corresponding percentages were 24.6 of deaths from consumption for persons employed in occupations with exposure to mineral dust, against 17.8 for occupied males generally in the State of Rhode Island. The percentage of deaths from respiratory diseases other

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PROPORTIONATE MORTALITY FROM CONSUMPTION IN OCCUPATIONS EXPOSED TO MINERAL DUST, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for occupations exposed to mineral dust from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths in occupations exposed to mineral dust, 1897 to 1906, due to—		Per cent of deaths due to consumption in—	
	All causes.	Consumption.	Occupations exposed to mineral dust.	Males in registration area 1900 to 1906.
15 to 24 years	413	131	31.7	27.8
25 to 34 years	821	391	47.6	31.3
35 to 44 years	936	340	36.3	23.6
45 to 54 years	950	265	27.9	15.0
55 to 64 years	795	129	16.2	8.1
65 years or over	628	43	6.8	2.7
Total	4,543	[a] 1,299	[a] 28.6	[b] 14.8

[a] There were also 762 deaths from other diseases of the respiratory system, or 16.8 per cent of the deaths from all causes.
[b] The per cent of deaths from other diseases of the respiratory system in the registration area was 11.7.

It is evident from the foregoing observations and statistical data relating to a representative number of employments with exposure to mineral dust that the health-injurious effects of such exposure reveal themselves in a high general death rate, especially at ages 35 or over, and with correspondingly high specific death rates from consumption and from other respiratory diseases at ages 35 or over, by which time the dust inhaled has begun to show its fatal effect.

OCCUPATIONS WITH EXPOSURE TO VEGETABLE FIBER DUST.

In the group of occupations exposing to a continuous and considerable inhalation of vegetable fiber dust resulting from industrial processes the following representative employments have for the present purpose been included: Cotton ginning, cotton textile manufacture, spinning, weaving, hosiery and knitting mills, lace making, flax and linen manufacture, hemp and cordage manufacture, manufacture of jute and jute goods, paper manufacture, cabinetmaking, wood turning and carving. These occupations are all more or less subject to an excessive death rate from all causes, but in particular to a decided excess in the proportionate mortality from consumption, and in most cases also to a comparatively high degree of frequency in the occurrence of other respiratory diseases. The details of labor conditions as far as they could be conveniently included in the following summary of observations regarding particular trades appear to fully confirm the opinion that the degree of excess in consumption fre-

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quency is intimately related and in almost exact proportions to the degree of exposure to continuous and considerable inhalation of vegetable fiber dust.

COTTON GINNING.

Cotton ginning is the most important preliminary process in cotton manufacture, and is carried on extensively as a separate industry throughout the Southern States. The process consists of "stripping the fiber of cotton from the seed" by a most ingenious mechanical device, the best known of which is the so-called McCarthy machine, in common use throughout the United States.(a) An improvement, however, has been perfected, known as the so-called "saw gin," which has the decided advantage of a material increase in producing capacity. The object being to secure the largest amount of lint, or clean cotton, it is remarkable that from every ton of raw cotton only about 600 pounds reach the spinner. The amount of dust and dirt generated in the ginning process is, of necessity, very large, and the employment is, without question, decidedly detrimental to health. It is mitigated by the fortunate circumstance that it is carried on, as a rule, only for a portion of the year, and largely because of this fact the health conditions of the occupation have not attracted so much attention as would otherwise have been the case.

The enormous extent of the cotton-ginning industry is measured by the number of bales of cotton ginned during 1904, when the crop attained to 13,500,000 bales which, at 500 pounds each, represent 6,750,000,000 pounds of cotton passing through the gins. Most of the cotton is short staple, only about 1 per cent being Sea Island or long staple variety. The gins are either public or private establishments or merchant gins, all of which, however, have the essential features in common. They are now practically all run by steam power, the former use of horse or water power having almost disappeared. A ginnery includes three departments; that is, the ginhouse proper, the lint room, and the cotton compress, or screw, as it is usually known. In an early description of the conditions in the lint room, as a part of the United States census report on cotton manufacture for 1880, it was stated that—

The lint room varies in size from one-third to the full length of the end of the ginhouse to which it is attached. The lint cotton is thrown by the brush cylinder of the gin through a flue into this room. Strange to say, the lint rooms are not brushed or swept out from one season to another, or from one decade to another, for that matter. The dirt may accumulate an inch in depth on the floors and walls, but no broom is ever carried into this room from year to year.(b)

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[a] For an instructive and valuable descriptive account, see the Scientific American Supplement for April 1, 1905. See also Census Bulletin No. 97, on Supply and Distribution of Cotton, for the year ending August 31, 1908.

[b] Report of the Tenth Census, Vol. II, p. 945.

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The ginning process itself is well described in an account of the so-called Gullett cotton-ginning system, which is in general use throughout the Southern States:

The seed cotton is elevated by suction from the wagon or storage house, and deposited in feeders over each gin. These machines feed it uniformly into the roll boxes of gins, where the lint is separated from the seed. The lint is then blown by the draft from the brush through the flue system into the condenser, which forms it into a bat and deposits it direct in the press, where it is packed by the steam packer and baled, the dust from the condenser passing out through the roof by means of the dust flues. The seed falls from the roll boxes of gins into a screw conveyor underneath, through hoppers at each gins, however, the earlier conditions still prevail, and the dust nuisance during the ginning process constitutes a serious menace to the health of the employees.

The claims for this system are economy of time and labor and the material reduction of the dust nuisance. In the large majority of gins, however, the earlier conditions still prevail, and the dust nuisance during the ginning process constitutes a serious menace to the health of the employees.

The hygienic aspects of the sanitary problems in cotton ginning were early commented upon by Daniel Drake, M. D., in his treatise on the Principal Diseases of the Interior Valley of North America, where, in considering the miscellaneous causes of pulmonary inflammation, with special reference to the Southern States, he comments upon cotton fuzz and its effects upon the respiratory organs, referring in particular to employment in cotton gins. According to Drake—

The gin is a machine of rapid motion for eliminating the seed from cotton. It throws an immense amount of broken fibers or fuzz into the atmosphere, which are of necessity taken into the lungs of those who conduct the operation, who are generally Negroes. The period of ginning does not last very long, nor are a great number of operatives necessary to the management of a gin. When traveling in the South, I learned that proprietors do what they can to promote ventilation, avoid their ginhouses, and avoid employing men who are predisposed to pulmonary disease, and often change them, so that no one shall inhale the fuzz very long. These precautions indicate, as the public opinion, that it may do harm, as indeed it undoubtedly does, but to a less extent than might perhaps be expected. (a)

The observations of Drake as to the health-injurious effects of the cotton-ginning process were confirmed by other practicing physicians of the period and the earlier view is sustained by present-day medical opinion throughout the South. Since there are no vital statistics of persons employed in cotton ginning and no published observations of

a Principal Diseases of the Interior Valley of North America, by Daniel Drake, Vol. II, p. 799.

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medical practitioners at the present time, these brief observations are concluded by quoting the opinion of Mr. A. E. Thomas, a cotton planter before the war, who, with special reference to the susceptibility of the Negro, who continues to constitute the large majority of persons employed in connection with cotton-ginning processes, states that—

This subject is one of great interest with all our intelligent planters, as the effect of cotton ginning on their Negroes is very deleterious; so injurious, indeed, as to be obvious to the Negroes themselves, who endeavor to avoid the ginhouse. Planters select their oldest and least valuable Negroes for this occupation, knowing that the healthiest and most robust will, in a year or two, become diseased. To prevent these bad effects, it is not uncommon to make them wear and breathe through a veil, and give them molasses and water to drink, measures which appear to be generally effective. If a person not accustomed to breathe the air of a ginhouse goes into it while the machine is running, he is soon seized with a tickling sensation in his nostrils, followed by sneezing, coughing, and some degree of hoarseness. Continuing awhile in this situation, he begins to feel his nostrils stuffed up. After leaving the place he will have symptoms of a cold for several days. Remaining there longer, the stuffing of his nostrils may become so great as to prevent his breathing through them. The cough attendant on this affection is often dry, or small quantities of mucus, in which the lint and dust floating in the air have been entangled, will be thrown up. A feeling of soreness pervades the trachea and bronchial tubes. I have known several to have chronic bronchitis. I saw one death preceded by the discharge of an abscess from the lungs, and another die of phthisis, following on bronchitis. It is the custom every two or three weeks to stop the hands from field labor to bale the gin and cotton, at which they are commonly occupied two or three days. Before the end of this period they are apt to become affected with sneezing, coughing, and other catarrhal symptoms, which often continue for several days.[a]

It is evident, even in the absence of conclusive statistical data, that cotton ginning is a decidedly health-injurious employment, and that it would be much more so than actually observed in everyday experience but for the fact that the occupation extends over only a comparatively short period of the year.

COTTON TEXTILE MANUFACTURE.

In 1905 the manufacture of cotton textiles in the United States gave employment to 315,874 wage-earners, of whom 46.6 per cent were adult males, 40.6 per cent women, and 12.8 per cent children.[b] The diversity of the industry is considerable, and the processes of manu-

[a] Principal Diseases of the Interior Valley of North America, by Daniel Drake, Vol. II, p. 801.

[b] Census of Manufactures, 1905, Part I, p. lxxviii.

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facture require a high degree of specialized labor. Every process from the so-called "opening" of the cotton in the picker room to the carding, spinning, and weaving involves a more or less considerable degree of exposure to the inhalation of vegetable fiber dust, but the exposure varies materially in the different departments. The health aspects of the industry are complicated by other injurious factors besides dust, of which high temperature, excessive humidity, atmospheric electricity, noise, eye strain, and defective ventilation are the most important. The effects upon health in cotton textile manufacture, with special reference to dust exposure, have been admirably summed up by Arlidge, who, in his treatise on The Hygiene, Diseases, and Mortality of Occupations, remarks:

To summarize the incidental causes of ill health among cotton operatives, they are, dust from the cotton itself in the early processes of manufacture; heat with more or less watery vapor, combined in the weaving department with dust from the Cornish clay employed for sizing; long standing, and a stooping posture in the spinning and doubling department; monotony of work; continuous strain upon the attention; and excessive noise with vibration of machinery. To these must be added vitiated air from excessive consumption of gas, from overcrowding, and general defects of ventilation.

With special reference to the frequent occurrence of lung diseases among cotton workers, Arlidge holds that—

The dust of cotton is an irritant to the pharynx and larynx, where it speedily produces a feeling of dryness and huskiness. If inhaled longer, it reaches the bronchi, and sets up cough with white mucous expectoration. The cough will be for years chiefly a morning phenomenon on first rising, but it is also induced upon leaving the warm workroom. Fine fibers of cotton are found, on microscopical examination, in the sputum, and as these make their way into the pulmonary tissue, they set up morbid action, resulting in increasing density of it on the one hand, and of emphysematous expansion on the other. These morbid changes are accompanied by dyspnœa, wastings, and debility, but rarely with hæmoptysis; and together constitute a group of symptoms not inappropriately termed "industrial phthisis." Moreover, intercurrent diseases of the lungs, such as acute bronchitis and pneumonia, often arise and terminate life; and true tubercular phthisis is no uncommon cause of death.

The following is an extract from the observations of Lloyd, who confirms the observations of Arlidge in the statement that—

The dust of cotton, or "flue" as it is called, is composed largely of cotton fiber, and it has an appreciable taste and smell, especially to a person unused to it. It causes irritation to the nose, throat, larynx, and bronchial tubes. The symptoms are dryness of the throat, huskiness of the voice, cough, and expectoration. The cough is said to be worse in the morning, the expectoration being tenacious and difficult to be gotten rid of. Fibers of cotton have been found in the sputa with the microscope. In time proliferation of connective tissue

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ensues, as in most cases of industrial phthisis, and dyspnœa and emaciation occur. In many cases it is evident that a true tubercular infection takes place.

Lloyd quotes Dr. F. F. Simpson, of Spartanburg, S. C., with reference to an affection of the tonsils among cotton operatives in that State, due to the custom of sucking cotton fiber strongly into the mouth in some processes of their work, as follows:

These fibers become encysted in the crypts of the tonsils, thus becoming a source of constant irritation, and giving rise to what in that section is not inaptly termed "weavers' tonsils."

In a report of the Massachusetts state board of health on dangerous trades a similar practice is commented upon as follows:

A bad, unhygienic habit, common to all weavers who tend old-fashioned looms, is that of drawing the filling through the shuttle eye with the mouth. The weaver puts his mouth close to the shuttle, and, by means of a quick intake of breath, sucks the end of the thread through the shuttle eye, thus drawing into his mouth more or less fine lint and dust, which gives rise to spitting, and sooner or later may cause irritation of the mucous membrane of the throat.

It is explained that the gradual replacement of old-style looms by the Northrup loom, in which after the drum is filled with shuttles the action is entirely automatic, has eliminated this practice mechanically where persuasion and disinterested advice have been of no avail.

The general dust problem in textile factories is discussed in the same report at considerable length, and since the observations are descriptive of present-day conditions in the textile centers of New England, the remarks are quoted almost in their entirety as a most useful contribution to the knowledge of this important branch of occupation disease:

The presence of dust in the air of workrooms is a prominent feature in its influence on health. Aside from dirt and other impurities which may be in the stock, it is the opinion of recognized medical authorities that vegetable dusts are markedly inimical to health. Those operatives in cotton mills who are peculiarly sensitive to unhygienic influences may become seriously affected through the constant irritation of cotton dust or "fly" in the upper air passages, giving rise first to dryness of the throat and later to cough and expectoration. Flax dust is thought to be even more irritating than cotton, while dust in the woolen and silk mills (animal origin) is considered to be less harmful in its effects.

There are many departments in which processes are conducted which expose the employees to dust; but the weaving, spinning, carding, and waste rooms illustrate the important unhygienic conditions commonly associated with this disturbing element. In estimating the effects of dust upon health, the following considerations, among others, are to be borne in mind:

1. Grade of stock used, e. g., quality of cotton.
2. Quantity of dust in a given room.

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3. Whether the dust is constant.
4. Type of construction of the room.
5. System of management.
6. Number and kinds of other unhygienic influences present.
7. Means of ventilation.
8. Health and susceptibility of the individual.

In some weave rooms the air is so filled with minute bits of dust as to present a hazy or "smoky" appearance throughout the room, and parts of the room are covered with the small particles which have settled thereon; while other weave rooms are practically free from such dust, there being merely a slight amount of lint or dust of microscopic fineness. Dust in ring-spinning rooms is more constant and is greater in amount than in weave rooms. In a fine-goods mill, in which a high quality of cotton is used in a properly constructed and well-regulated room, the amount of dust present is comparatively unimportant, from the point of view of health. On the other hand, in a coarse-goods mill, where waste stock is used in a low-studded and generally neglected room, the amount, constancy and character of the dust is such as to suggest the probability of real danger.

While in both weave and ring-spinning rooms there are many unhygienic factors, the principal features of the card room are (1) the amount of dust and (2) lack of proper ventilation and effective means of removing the dust. Cotton dust in the card room varies greatly both in quality and quantity. It is always considerable, owing to the carding process of freeing and cleaning the material.

In some mills it is enormous in amount, with considerable dirt as a concomitant. The quantity of dust is commonly sufficient to cause a distinct cloudiness of the atmosphere, which, in a room lacking proper ventilation, is a serious menace to the health of the operatives.

It has long been known that work which involves more or less constant confinement in a dusty atmosphere predisposes to the development of diseases of the lungs, especially of pulmonary consumption; but only in recent years, through the science of bacteriology, has the medical profession and the public been enlightened as to the specific cause of consumption, and the method of its dissemination among the susceptible. The people of to-day, therefore, in every walk of life, have a far greater responsibility thrust upon them with respect to minimizing this source of danger by the application of all reasonable sanitary measures. We have to bear in mind, then, in considering the dust problem, the possibility of the presence of "infectious dust" from dried sputum in the air of different mill rooms. Persons suffering from consumption can not always be detected in these rooms, and the habit of indiscriminate spitting involves the possibility of infection.

A comparison of the important constant or possible unhygienic influences in the ring-spinning and carding departments, with emphasis upon the dust in these rooms, is as follows:

RING SPINNING.

1. Considerable dust (constant).
2. "Infectious dust" (dried sputum).
3. Excessive heat (with artificial moisture).

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4. Excessive heat (without artificial moisture in some rooms).
5. Lack of provision for a plentiful supply of fresh air.
6. Poor light.
7. Carbon monoxide gas, and excessive amounts of carbon dioxide from respiration and combustion.

CARDING.

1. Dust (abundant and continuous).
2. "Infectious dust" (dried sputum).
3. Lack of provision for a plentiful supply of fresh air.
4. Carbon monoxide gas, and excessive amounts of carbon dioxide from respiration and combustion.

There are, unfortunately, no very satisfactory or trustworthy general vital statistics of the cotton industry in the United States. The vital statistics of the census of 1890 included 1,080 deaths of male textile factory operatives, and of this number 15.4 per cent had attained to ages 65 or over. The general death rates were slightly above the average for the manufacturing class at ages 15 to 25, below at ages 25 to 65, and slightly above the average at 65 years or over. The consumption death rate for textile factory operatives was 2.27 per 1,000, or below the general average, but this in all probability was the result of defective enumeration, partly because of the crude grouping of all textile operatives as a class.

The vital statistics of the census of 1900 included 1,332 deaths of male textile operatives from all causes, and of this number 232, or 17.4 per cent, had attained to ages 65 or over. The death rates generally were below the average for males employed in manufacturing and mechanical industries, except at ages of 65 or over. Out of the 1,332 deaths from all causes, previously referred to, 313, or 23.5 per cent, were from consumption. The corresponding death rate was 2.08 per 1,000, against 2.62 for the manufacturing and mechanical class. The death rate from other respiratory diseases was 1.07 per 1,000 for textile factory operatives, against 1.81 for the manufacturing and mechanical industry class, so that for both consumption and other respiratory diseases the recorded mortality indicates a lesser liability to these diseases than is met with among occupied males in more or less similar employments. These statistics, however, can not be accepted as entirely accurate or conclusive, and they are here included only to call attention to the necessity of extreme caution in accepting the vital statistics of certain occupations where labor conditions materially interfere with the continuity of employment and where the opportunities for change from one occupation to another are rather exceptional.

The available occupation mortality statistics of Rhode Island refer to textile operatives as a class, regardless of the kind of fiber manufac-

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tured, which hardly warrants entirely safe conclusions, and the same is true of the corresponding statistics of the Twelfth Census of the United States, which groups mill and factory operatives under textiles, also without distinction of the kind of textile manufactured, such as cotton, wool, flax, jute, etc. The Rhode Island statistics for the period 1897 to 1906 include 798 deaths from all causes, and of this number 218, or 27.3 per cent, were from consumption.

In English occupation mortality statistics cotton textile operatives are combined with persons employed in the manufacture of flax and linen, which also to a certain degree impairs their value. Since the proportion of persons employed in linen and flax manufacture is comparatively small, the error is not a very serious one. In the aggregate the English data for 1890 to 1892 include the observed mortality experience of 538,077 occupied males exposed to the risk of death one year, among whom there occurred 7,471 deaths from all causes. The specific death rates have been calculated by divisional periods of life, and an instructive comparison is possible with the corresponding mortality of occupied males generally.

MORTALITY FROM ALL CAUSES AMONG MALES EMPLOYED IN THE MANUFACTURE OF COTTON, FLAX, AND LINEN, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1890 TO 1892, BY AGE GROUPS.

[From Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for cotton, flax, and linen employees.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.55	3.55	+ 1.00	139
20 to 24 years	5.07	5.95	+ .88	117
25 to 34 years	7.29	7.17	− .12	98
35 to 44 years	12.43	12.83	+ .40	103
45 to 54 years	20.66	24.68	+ 4.02	119
55 to 64 years	36.66	52.55	+15.89	143
65 years or over	102.32	159.08	+56.76	155

The mortality of English cotton-mill operatives, including workers in linen and flax, is shown by the preceding table to have been excessive at all ages, except 25 to 34. This is probably the result of the very heavy death rate prevailing at ages under 20, and the comparatively high death rate at ages 20 to 24. The excess in the general mortality of persons employed in this occupation becomes more apparent at ages 45 to 54, and decidedly pronounced at ages 55 or over. It requires no very extended analysis of the causes of death among this class of operatives to establish the fact that the excess in the general mortality is primarily the result of a high death rate from consumption and other respiratory diseases. The facts, as far as they

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are obtainable from the published reports, are set forth in tabular form below, which shows the mortality rate by divisional periods of life from consumption and from respiratory diseases other than consumption among cotton mill operatives, including linen and flax, and among occupied males generally, first from consumption and second from other respiratory diseases:

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG MALES EMPLOYED IN THE MANUFACTURE OF COTTON, FLAX, AND LINEN, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1890 TO 1892, BY AGE GROUPS.

[From Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for cotton, flax, and linen employees.			Death rate per 1,000 for all occupied males.	Death rate for cotton, flax, and linen employees.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.70	1.26	+0.56	180	0.26	0.44	+ 0.18	169
20 to 24 years.....	1.95	2.86	+.91	147	.61	.89	+ .28	146
25 to 34 years.....	2.63	2.91	+.28	111	1.13	1.24	+ .11	110
35 to 44 years.....	3.43	3.24	−.19	94	2.50	3.41	+ .91	136
45 to 54 years.....	3.38	4.09	+.71	121	5.15	7.71	+ 2.56	150
55 to 64 years.....	2.65	3.11	+.46	117	10.32	18.19	+ 7.87	176
65 years or over ..	1.50	[2.50	+1.00	167	25.91	53.19	+27.28	205

These earlier statistics have been included, since they will prove useful for reference and comparison with the more recently published occupation mortality data for males employed in this industry, which will subsequently be referred to in detail. The preceding table shows that the mortality from consumption among cotton workers was excessive at all ages except the period 35 to 44, when, however, the rates quite closely approach the average for occupied males generally. More significant are the pronounced differences in the mortality of cotton workers from respiratory diseases other than consumption, which is excessive at all ages and which probably includes some deaths from fibroid phthisis recorded as chronic bronchitis or chronic pneumonia, or under some similar term.

More trustworthy and conclusive are the corresponding statistics of cotton manufacture for England which have been recently made public for the three years ending with 1902 and which are referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

In the term of life from the twentieth to the forty-fifth year the death rates of cotton workers are below the standard for occupied and retired males; but at other ages they exceed it. In the main working

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time of life the comparative mortality figure for the industry is 1,114, or 11 per cent above the standard. Cotton operatives experience an excess of about one-fourth in the mortality from nervous and respiratory diseases, and also a slight excess from cancer, phthisis, circulatory diseases, Bright's disease, and suicide. Their mortality from influenza is less than the normal; they appear to be but slightly addicted to intemperance, and their mortality figure from accident is little more than half the standard.

The English occupation mortality statistics for males employed in cotton manufacture during the three-year period 1900 to 1902 include 5,710 deaths from all causes. Of this number of deaths 1,093, or 19.1 per cent, were from consumption, and 1,084, or 19.0 per cent, from respiratory diseases other than consumption; of the deaths from all causes 2,177, or 38.1 per cent, were therefore from diseases of the lungs and air passages. In the following table a comparison is made of the mortality from all causes among men engaged in cotton manufacture with that of occupied males generally, and the result indicates an excessive mortality at ages 45 or over, and also a slightly excessive mortality at ages 15 to 19. At ages 20 to 44 the mortality among cotton workers was somewhat less than for all occupied males.

MORTALITY FROM ALL CAUSES AMONG MALES EMPLOYED IN COTTON MANUFACTURE, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for male cotton workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.68	+ 0.24	110
20 to 24 years	4.41	4.32	− .09	98
25 to 34 years	6.01	5.48	− .53	91
35 to 44 years	10.22	9.61	− .61	94
45 to 54 years	17.73	20.46	+ 2.73	115
55 to 64 years	31.01	41.15	+10.14	133
65 years or over	88.39	127.31	+38.92	144

In the table which follows the mortality from consumption and from respiratory diseases other than consumption among men employed in cotton manufacture is compared with the normal mortality for all occupied males from these diseases by divisional periods of life. The comparison shows that the mortality from consumption was above the average at all ages except 25 to 34, when the mortality was practically the same for cotton workers as for all occupied males. The excess in the mortality is quite pronounced at ages 45 or over. The mortality from other respiratory diseases was somewhat excessive at all ages except 35 to 44, but the excess was most pronounced at ages 20 to 24 and at 45 or over.

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MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG MALES EMPLOYED IN COTTON MANUFACTURE, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for male cotton workers.			Death rate per 1,000 for all occupied males.	Death rate for male cotton workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.54	0.82	+0.28	152	0.24	0.25	+ 0.01	104
20 to 24 years.....	1.55	1.65	+ .10	106	.48	.60	+ .12	125
25 to 34 years.....	2.03	2.01	− .02	99	.77	.81	+ .04	105
35 to 44 years.....	2.74	2.89	+ .15	105	1.66	1.51	− .15	91
45 to 54 years.....	3.04	3.66	+ .62	120	3.32	4.18	+ .86	126
55 to 64 years.....	2.16	2.76	+ .60	128	6.54	9.80	+ 3.26	150
65 years or over...	1.11	2.13	+1.02	192	17.77	28.50	+10.73	160

Summarizing these observations and statistical data, they indicate a somewhat excessive mortality, particularly at the more advanced ages, undoubtedly due to the inhalation of vegetable fiber dust, the health-injurious effects of which are more slow to reveal themselves than when the inhalation is of metallic and mineral dusts. The statistics available suggest the necessity of a thorough and qualified investigation to determine with more accuracy the facts regarding the mortality of cotton workers.

TEXTILE SPINNERS.

Spinning, in cotton and woolen manufacture, is peculiarly an employment of women and children, who constitute the large majority of persons employed in American and foreign mills. It is true, as pointed out in the census report on cotton manufacture, that in proportion as the speed of machinery increases women and children are displaced by men,[a] but even under modern conditions out of 55,488 frame spinners employed in the manufacture of cotton textiles only 10,709 were men, or 19.3 per cent. Of the remainder, 25,701 were women and 19,078 children. Mule spinners are almost invariably men, but the number of mule spinners in the cotton industry is not large, and in 1905 was only 4,866, of whom 3,691 were employed in the New England States.[b] In spinning the amount of visible dust is not considerable, but large quantities of fly or flue are produced during the spinning, twisting, and drawing operations, which rapidly accumulate on and about the machines, requiring constant cleaning and dust removal, for which practically no effective provision is made in most of the American mills at the present time. The

[a] Census of Manufactures, 1905, Part III, p. 30.

[b] Census of Manufactures, 1905, Part III, p. 50.

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employment has the serious disadvantage of a comparatively high and moist temperature, which, according to Arlidge, during the summer months induces "exhaustion, sweating, and debility; results the more felt because spinning entails nearly constant standing, or slight movements to and fro to follow the 'mule frames.'" Arlidge observed, further, that "what renders the spinning rooms more insanitary than they would be otherwise, considering their general spaciousness, is that the temperature is maintained night and day, and that all inlets for air are kept carefully closed. In consequence, there is not the necessary renewal of air for healthy breathing. Moreover, in such close rooms the operatives acquire a particular sensitiveness to currents of air and to change of temperature, and are themselves opposed to most attempts at ventilation. Happily, these remarks are not so generally applicable as they were formerly, for the better recognition of what constitutes ventilation, together with the skill of engineers, has worked a great reform in the sanitary state of spinning rooms." The mortality from consumption among spinners is known to be high, both among men and women, and, no doubt, in a large measure this is the direct result of the employment. The degree of consumption frequency among spinners, however, is possible of a material reduction under satisfactory conditions of light, temperature, and ventilation. Modern American cotton mills, especially in the South, are in many respects more hygienic than the old type granite structures typical of New England. Compared with certain foreign countries, the mortality of cotton spinners, at least, would appear to be somewhat lower in the United States, due, no doubt, largely to the more recent development of the industry and the generally more satisfactory conditions of labor and life in this country.

The only really trustworthy general mortality statistics of spinners are the returns for Blackburn, England, prepared annually under the direction of Dr. Alfred Greenwood, the medical officer of health. An admirable analysis of these returns by Mr. F. S. Crum was published in the New York Medical Record for August 11, 1906, and from the tables there presented are extracted the following comparative death rates of spinners and weavers, including separately the rates for consumption and for other respiratory diseases:

MORTALITY OF **SPINNERS AND WEAVERS** IN BLACKBURN, ENGLAND, 1889 TO 1905.

Age at death.	Death rate per 1,000 from all causes of—		Death rate per 1,000 from consumption among—.		Death rate per 1,000 from other diseases of the respiratory system of—	
	Spinners.	Weavers.	Spinners.	Weavers.	Spinners.	Weavers.
15 to 24 years	5.3	3.7	1.3	1.1	0.8	0.4
25 to 34 years	7.7	4.8	2.5	2.4	1.9	.7
35 to 44 years	10.3	9.1	2.8	1.9	2.2	1.8
45 to 54 years	25.7	14.9	2.4	1.8	7.9	4.8
55 to 64 years	43.7	44.7	.8	2.8	17.8	15.1
65 years or over	177.7	139.5	1.8	.9	48.8	26.6

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In the State of Rhode Island, during the five years ending with 1906, there were recorded only 71 deaths of male spinners, and of this number 18, or 25.4 per cent, were from consumption, and 5, or 7 per cent, were from other respiratory diseases. It is quite probable, however, that the actual mortality was greater than the recorded on account of the difficulty in securing, without special inquiry, accurate information as to decedents' exact occupation at the time of death.

The recorded industrial insurance mortality statistics of spinners include 189 deaths from all causes, of which 56, or 29.6 per cent, were from consumption. Of the mortality of spinners from respiratory diseases other than consumption, 17 were from pneumonia, 6 from asthma and bronchitis, and 5 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 44.4 per cent of the mortality of spinners was from diseases of the lungs and air passages. Spinners, as grouped for the purpose of this investigation, include spinners of textiles generally, but chiefly those in the cotton industry. Because of the fact that the large majority of spinners are women, the mortality experience with this class of labor is comparatively small. The excess in the consumption mortality of spinners is more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. Although the consumption mortality was excessive at all ages under 55, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 50 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of spinners in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG SPINNERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for spinners from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of spinners, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Spinners.	Males in registration area, 1900 to 1906.
15 to 24 years	28	13	46.4	27.6
25 to 34 years	38	19	50.0	31.3
35 to 44 years	36	16	44.4	23.6
45 to 54 years	27	7	25.9	15.0
55 to 64 years	37	1	2.7	8.1
65 years or over	23	.....	.....	2.7
Total	189	56	29.6	14.6

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The preceding statistical data, including the industrial insurance mortality experience, confirm the conclusion that the mortality of spinners from consumption is considerably above the average throughout practically the entire active working period of life, but in particular between the ages of 15 and 54, inclusive.

TEXTILE WEAVERS.

Weaving is a more arduous occupation than spinning, but apparently the health conditions affecting this employment are more favorable than the corresponding conditions in the spinning rooms. Spinning attracts the less physically strong or those who because of their frail physique would be predisposed to consumption. This, in part, no doubt, accounts for the difference in the mortality rates of the two employments. The census of 1905 returned the number of weavers of cotton goods in the United States as 98,807, but of these 50,559 were women and young persons.(a) Arlidge describes the conditions in weaving rooms, with special reference to health-injurious circumstances, in part, as follows:

Weaving sheds are of vast dimensions, and, in some instances, hold 1,000 looms. The noise in the winding and spinning rooms is very great, but in the huge weaving sheds it is almost deafening. At the same time, the places are excessively hot; and the air is charged with moisture, and, when there is heavy sizing, with dust of china clay, the same material as used in making pottery. Added to these insanitary circumstances are bodily exhalations of the workers—breath and perspiration. The heat and moisture are necessary to prevent the undue breakage of the yarn in the act of weaving, and the more so where the yarn is of inferior quality and is heavily sized, to make it marketable.

Conditions in American weaving rooms are probably somewhat better than in England, especially on account of the fact that the sizing used in the preparation of the warp is, as a rule, of common starch, sago, or some similar vegetable compound, instead of china clay dust, which is in common use in English factories. The weaving rooms in American mills are usually high-studded but rarely as well ventilated as would be necessary to secure the best conditions favorable to health and life. Effective artificial ventilation is the exception rather than the rule. The conditions as to temperature and artificial humidity are probably less favorable in weaving rooms than in spinning rooms, but in the latter a considerable amount of fly or dust is generated during the spinning processes. English mortality statistics of weavers indicate a lesser liability to consumption and other respiratory diseases among this class than among spinners, but it must always be taken into account that such statistics are likely to

(a) Census of Manufactures, 1905, Part III, p. 50.

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err seriously with advancing age when it becomes very difficult to account for those who have retired from the textile industry to follow other and less arduous employments. It is open to question whether the recent English attempt to account for the entire mortality of all the occupied and retired in certain specified trades really has been a success and warrants the conclusions arrived at.

In the analysis by Mr. F. S. Crum of the mortality of spinners and weavers a comparison is made of the death rate of English weavers with the general average death rate in the registration area of the United States, which is reproduced here to emphasize how even an admittedly imperfect registration of the mortality of this trade indicates a decidedly high death rate among this class:

PROPORTIONATE MORTALITY OF WEAVERS FROM CONSUMPTION AND OTHER RESPIRATORY DISEASES, BLACKBURN, ENGLAND, 1899 TO 1905.

Age at death.	Per cent of deaths due to consumption among weavers in—		Per cent of deaths due to other respiratory diseases among weavers in—	
	Blackburn, England.	United States registration area, 1900.	Blackburn, England.	United States registration area, 1900.
15 to 24 years	28.9	30.9	10.8	9.5
25 to 34 years	50.6	32.4	14.0	10.4
35 to 44 years	20.8	22.6	19.3	12.2
45 to 54 years	12.1	13.3	32.0	13.4
55 to 64 years	6.4	7.6	33.7	14.6
65 years or over	.6	2.9	25.5	14.7

The Rhode Island statistics of mortality by occupation only record the deaths of weavers, beginning with the year 1901. During the period 1901 to 1906 the recorded mortality of weavers from all causes was 259, and of this number 67, or 25.9 per cent, were from consumption and 30, or 11.6 per cent, from other respiratory diseases. Of the total mortality 97, or 37.5 per cent, were from diseases of the lungs and air passages.

The recorded industrial insurance mortality statistics of weavers include 915 deaths from all causes, of which 254, or 27.8 per cent, were from consumption. Of the mortality of weavers from respiratory diseases other than consumption 78 were from pneumonia, 10 from asthma, 18 from bronchitis, and 13 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 40.8 per cent of the mortality of weavers was from diseases of the lungs and air passages. The number of deaths of weavers under consideration is exceptionally large and strictly representative of this important occupation. It is difficult, however, to determine the kind of dust exposure to which this class of labor was most

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subject, since the term is a general one, including employments in every branch of textile manufacture. The excess in the consumption mortality of weavers is more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 53.4 were from consumption, against a normal expected proportion of 31.3. If the proportionate mortality of weavers is compared with the corresponding mortality of spinners, it appears that while for spinners the proportion was 46.4 per cent at ages 15 to 24 it was 39.8 per cent for weavers; at ages 25 to 34 the proportion was 50.0 per cent for spinners, against 53.4 per cent for weavers; at ages 35 to 44 the proportion was 44.4 per cent for spinners, against 38.1 per cent for weavers, and at ages 45 to 54 the proportion was 25.9 per cent for spinners, against 25.7 per cent for weavers. At ages 55 or over the numbers for spinners are too small for an entirely safe conclusion. The comparison would warrant the opinion that the occupation of spinners is somewhat more exposed to health-injurious conditions, resulting in a somewhat higher proportionate consumption mortality from this employment. The analysis of the consumption mortality of weavers in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG WEAVERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for weavers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of weavers, 1897 to 1906 due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Weavers.	Males in registration area, 1900 to 1906.
15 to 24 years	108	43	39.8	27.8
25 to 34 years	174	93	53.4	31.3
35 to 44 years	155	59	38.1	23.6
45 to 54 years	144	37	25.7	15.0
55 to 64 years	137	15	10.9	8.1
65 years or over	197	7	3.6	2.7
Total	915	254	27.8	14.8

The preceding observations and mortality statistics, including the insurance experience, confirm the conclusion that the mortality of weavers from consumption is excessive at all ages, but in particular at ages 15 to 64, or throughout the entire period of the active working lifetime of persons employed in this occupation.

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MANUFACTURE OF HOSIERY AND KNIT GOODS.

The manufacture of hosiery and knit goods has within recent years attained to very large proportions in the United States, giving employment to 103,715 wage-earners in 1905, of whom 66.4 per cent were women and 9.3 per cent children and young persons under 16 years of age. The rapid growth of this industry is illustrated by the fact that during the five years ending with 1905 the number of wage-earners increased 24.4 per cent, while the value of the product increased 43 per cent. The number of knitting machines during the same period increased from 69,047 in 1900 to 88,374 in 1905.(a) About one-third of these are automatic circular hosiery machines, but the amount of dust generated during knitting processes is practically the same, irrespective of the kind of machinery in use. The material used in knitting and hosiery manufacture is chiefly cotton and woolen and worsted yarn, but considerable quantities of shoddy, jute, hemp, silk, and mohair are also used in an endless variety of combinations, which vary widely from year to year, according to the demands of the trade. It has seemed best, however, for the present purpose to include the manufacture of hosiery and knitted goods under the employments exposing chiefly to the risk of vegetable dust inhalation, since over one-half of the material used is cotton or some other vegetable fiber. The health conditions in knitting and hosiery mills conform quite closely to those of cotton and woolen spinning and weaving rooms. The health-injurious effects of the industry are probably most pronounced in the spinning, weaving, knitting, finishing, calendering, and drying rooms, but no qualified investigation has been made to warrant final conclusions.

There are no official vital statistics of hosiery and knit goods manufacture for the United States, and thus far no analysis has been made of the mortality of this class in the cities and towns where the industry is concentrated and where large numbers are employed. The Rhode Island statistics for knitters are not of determining value, since only 8 deaths of male knitters have been recorded during the ten years ending with 1906, but of this small number 5, or 62.5 per cent, were deaths from consumption.

The mortality of hosiery workers in England and Wales is referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, as follows:

The death rates of hosiery workers exceed the standard for occupied and retired males at ages 20 to 25 and 55 years and upward, while at other ages the rates are below the standard. In the main working period of life the comparative mortality figure is 921, or 8 per cent below the standard. The mortality from phthisis exceeds the average

(a) Census of Manufactures, 1905, Part III, p. 68.

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by one-fifth part, and there is also a slight excess from cancer, circulatory diseases, and suicide, whilst from every other cause the mortality is below the standard; the mortality from influenza, from alcoholism and liver disease, from Bright's disease, and from accident, shows a marked defect as compared with the average.[a]

The English occupation mortality statistics for persons employed in hosiery manufacture are of considerable value, since they include 881 deaths from all causes occurring during the three-year period ending with 1902. Of this number of deaths 97, or 11 per cent, were from consumption, and 161 deaths, or 18.3 per cent, from other respiratory diseases, which combined give 29.3 per cent of the mortality from diseases of the lungs and air passages. In the table which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the result is suggestive of conditions in this trade decidedly unfavorable to health and life at ages 55 or over:

MORTALITY FROM ALL CAUSES AMONG MALES EMPLOYED IN HOSIERY MANUFACTURE, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for males in hosiery manufacture.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	1.00	− 1.44	41
20 to 24 years	4.41	5.75	+ 1.34	130
25 to 34 years	6.01	5.39	− .62	90
35 to 44 years	10.22	6.71	− 3.51	66
45 to 54 years	17.73	16.10	− 1.63	91
55 to 64 years	31.01	35.11	+ 4.10	113
65 years or over	88.39	132.12	+43.73	149

The death rates of men employed in hosiery manufacture are below the general average at all ages under 55 except at ages 20 to 24, when, however, small numbers are in part responsible for a possibly accidental fluctuation in the death rate.

In the table which follows the mortality from consumption and from respiratory diseases other than consumption among men employed in hosiery manufacture is compared with the normal mortality of occupied males from these diseases by divisional periods of life. The comparison shows that the mortality from consumption was above the average at all ages under 65 except at 35 to 44. The re-

[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. xc.

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turns are not entirely conclusive and are possibly impaired by the more or less fluctuating character of the population and the tendency to leave the manufacture of hosiery for other branches of the textile industry. The mortality from other respiratory diseases was below that of all occupied males at all ages under 65.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG MALES EMPLOYED IN HOSIERY MANUFACTURE, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for male hosiery workers.			Death rate per 1,000 for all occupied males.	Death rate for male hosiery workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.54	0.60	+0.06	111	0.24	0.20	−0.04	83
20 to 24 years.....	1.55	2.35	+ .80	152	.48	.26	− .22	54
25 to 34 years.....	2.03	2.46	+ .43	121	.77	.70	− .07	91
35 to 44 years.....	2.74	2.48	− .26	91	1.66	.75	− .91	45
45 to 54 years.....	3.04	4.23	+1.19	139	3.32	2.93	− .39	88
55 to 64 years.....	2.16	3.47	+1.31	161	6.54	6.01	− .53	92
65 years or over.	1.11	.79	− .32	71	17.77	27.06	+9.29	152

The recorded industrial insurance mortality statistics of hosiery and knitting mill employees include only 65 deaths from all causes, of which 24, or 36.9 per cent, were deaths from consumption. The excess in the consumption mortality of hosiery and knitting mill employees is clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG HOSIERY AND KNITTING MILL EMPLOYEES, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for hosiery and knitting mill employees from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of hosiery and knitting mill employees, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Hosiery and knitting mill employees.	Males in registration area, 1900 to 1906.
15 to 24 years.....	23	5	21.7	27.8
25 to 34 years.....	22	15	68.2	31.3
35 to 44 years.....	7	2	28.6	23.6
45 to 54 years.....	9	2	22.2	15.0
55 to 64 years.....	3	.....	.....	8.1
65 years or over.....	1	.....	.....	2.7
Total.....	65	24	36.9	14.8

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It is found, in summarizing these observations and statistical data, that they do not warrant final conclusions but suggest the necessity of a qualified and extended investigation to determine with accuracy the facts regarding the mortality of this class of labor.

LACE MANUFACTURE.

Lace making in the United States has not as yet attained to considerable proportions, but the perfection of machinery for lace making gives promise of a considerable development of this industry in the United States in the future. The subject has attracted the attention of the Bureau of Manufactures, and a very interesting descriptive report on machine-made lace in Europe was recently published by the Department of Commerce and Labor. According to this report lace making by machinery is an extremely complicated process, with resulting labor conditions quite closely resembling those of hosiery and knit-goods manufacture. No very satisfactory account of the conditions of labor in this industry has been published, with special reference to the different employments, except lace dressing, which is held to be accompanied by serious health-injurious consequences, but chiefly on account of the high temperature under which this process is carried on. In a special report upon lace dressing, by the medical officer of health of the city of Nottingham, England, this process in its relation to health is in part described as follows:

The lace, after having been bleached, and, in some cases, dyed, and then dipped in starch solution, is taken in rough and wet condition to the dressing (or drying) rooms (usually over 100 yards long by 15 to 20 yards wide and 9 to 10 feet high) and there stretched upon horizontal frames to dry. In the case of some fine silk nets, the unstarched fabric is placed upon the drying and stretching frames, and the dressing applied to the stretched material on the frames. The dressing rooms are heated by steam or hot-water pipes, and their temperature usually ranges, in this country, from 75° to 100° F. It is made to vary to suit the requirements of different materials and according to the condition of the external air. In very hot and dry weather, all artificial heat is occasionally dispensed with for cotton goods; but for silk goods, which are reputed to require specially quick drying, artificial heat is always employed, and the temperature of some silk-lace dressing rooms in Lyon (France) is said often to be as high as between 130° and 140° F. The drying process is assisted by large revolving fans placed directly over the drying material.

The Stenter dressing or drying machine calls for special mention, as its use frequently modifies the distribution of hot air in the rooms where it is employed. In this machine, which is used principally for lace curtains, the fabric is carried by an endless chain into an atmosphere heated by multitubular boilers (the air being driven through the steam-heated boiler tubes), and the whole mechanism, with its

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contained lace material, is usually boxed in with wooden casing furnished with ventilating openings. In rooms where this machine is in use, the temperature seldom rises above 80° F., except in the immediate neighborhood of these openings and at the feeding end of the machine.

The investigation at Nottingham was a thoroughly qualified inquiry, including a careful consideration of the available vital statistics referring not only to those who had been continuously employed in lace dressing, but also to those who had been casually employed; the number of the latter was found to be considerable. Many of the lace factory employees were interviewed and examined, but the opinion was practically unanimous that lace dressing, even if followed for many years, is not dangerous to health. Many of the employees were found to suffer a good deal from common colds, but such colds did not appear to be of greater frequency than among factory workers in general. The investigation did not disclose any special tendency to phthisis or to other lung diseases among the women, who alone work continuously in the dressing room, and this in the opinion of Dr. Philip Boobbyer, the author of the report, was more remarkable, since the majority were of a very poor class, living in poor houses and poor neighborhoods, and many no doubt led irregular and intemperate lives. The result of the investigation was summed up in the statement that—

Probably the strongest argument in support of the contention that lace dressing, as now carried on in Nottingham, is a healthy occupation, is to be found in the fact that large numbers of women have worked at it for very long terms of years continuously, have had good health while doing so, and have lived to advanced old age, either at work or in retirement. I have alluded elsewhere to the question which naturally arises, as to how far the case of these women is to be regarded as an illustration of the survival of the fittest, but up to this point have answered it only by general statements.

Although, as I have said, there are a good many people who have left this work for various causes after having tried it for a time, there are, on the other hand, large groups of those who have taken it up and adhered to it continuously during the whole period of their working lives, and the duration of these has certainly, in the majority of cases, been remarkably long. The only possible inference to be drawn from facts and figures like these is that the work people have established an absolute tolerance of the abnormal atmospheric conditions which exist in the lace-dressing rooms, and that life, and vigorous life, can be maintained to old age under these conditions.

Since lace dressing as carried on in England is practically a woman's employment, males employed in the lace industry generally did not come within the scope of the inquiry. Dr. Boobbyer, however, pointed out that the death rate from phthisis among the males was found to be high in contrast to the low death rate from phthisis

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among the females, but owing to the smallness of the number of men employed, and the continual fluctuation in this number, the expression of their phthisis mortality by means of a definite rate would, because of this fact, be seriously misleading.

Lace making in its relation to health was considered at some length by Arlidge, who first calls attention to the gradual changes from the rapid displacement of handmade lace by machine-made lace, and the decay of the industry in Nottingham, which, in his opinion, from a purely hygienic point of view was not an unmixed evil on account of the high ratio of phthisis and scrofula observed by him to prevail among those who followed this occupation. He refers to the occupation divisions in machine-made lace, chiefly lace making proper, finishing, and mending, the last named process being subdivided into dressing, gauffering, bleaching, and dyeing. The process of gauffering is, in his opinion, a particularly injurious one to health, chiefly on account of the fact that the machines are heated by gas. He states that—

It is a division of the occupation which is regarded on all hands as very unhealthy, chiefly on account of the very great heat connected with it and, in less measure, of a sickly smell evolved. The "finishing" of cotton lace entails a higher temperature than that of silk lace. The same fact applies when "Paris" dressing is done. The presence of a large surface of moist tissue and the elevation of temperature necessarily imply a more or less humid atmosphere and free perspiration. Fortunately the admission of fresh air is permissible at times from open windows. For the most part finishing rooms are heated by hot water or steam pipes, though in some factories open fires are found in the making-up departments; the air is dry, and the making-up machines, heated by gas or by steam pipes, render it very hot, especially when several of them are situated in the same apartment.

A summary of these conclusions of qualified observers seems to warrant the opinion that dust, in relation to lace manufacture, is reduced to a minimum and apparently is not of a serious consequence to the employees. This opinion is confirmed by English vital statistics, which indicate that the death rates from phthisis are at least not above the average, and at some divisional periods of life they are decidedly below the average of consumption frequency in other branches of textile manufacture.

The most recent English mortality statistics of lace manufacture are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General in part as follows:

The number of male lace workers is comparatively small, and it is found that as compared with the standard for all occupied and retired males, the death rates at the several groups of ages fluctuate considerably, being below that standard at ages 20 to 25 and 35 to 55,

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and above it at all other ages. In the main working time of life the comparative mortality figure is 950, or 5 per cent below the standard. Lace workers appear to suffer little from influenza and respiratory diseases, and only half the ordinary fatality from accident. They show, however, a marked excess in the mortality from cancer, and the mortality from alcoholism and liver disease as well as from phthisis, from nervous and circulatory diseases and from suicide also exceeds the standard.(a)

The recent English mortality statistics for lace workers are not quite conclusive and do not warrant an entirely definite opinion as to the health injurious effects of this employment. In the table which follows, a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the comparison shows that the general death rate of lace workers was above the average at ages 15 to 19, 25 to 34, and 55 to 64. Since the number of men employed in this industry is comparatively small the statistical data do not warrant final conclusions.

MORTALITY FROM ALL CAUSES OF MALE LACE WORKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for male lace workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.58	+0.14	106
20 to 24 years	4.41	2.69	−1.72	61
25 to 34 years	6.01	6.71	+.70	112
35 to 44 years	10.22	8.38	−1.84	82
45 to 54 years	17.73	11.68	−6.05	66
55 to 64 years	31.01	32.56	+1.55	105
65 years or over	88.39	87.56	−.83	99

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of lace workers from consumption is compared with the normal mortality of occupied males generally, by divisional periods of life. The comparison shows that the mortality from consumption was excessive at the same age periods at which the general death rate was above the normal, but the excess was not very marked and does not warrant a decidedly unfavorable conclusion regarding the possible health-injurious effects of this industry.

(a) Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxxxviii.

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MORTALITY FROM CONSUMPTION AMONG MALE LACE WORKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for male lace workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	1.13	+0.59	209
20 to 24 years	1.55	1.12	− .43	72
25 to 34 years	2.03	2.84	+ .81	140
35 to 44 years	2.74	2.39	− .35	87
45 to 54 years	3.04	2.57	− .47	85
55 to 64 years	2.16	2.22	+ .06	103
65 years or over	1.11	.74	− .37	67

For a final and entirely conclusive opinion additional information is required, but at present no trustworthy statistical data are available for the United States.

FLAX AND LINEN MANUFACTURE.

The manufacture of flax, hemp, and jute products in the United States is only gradually assuming large proportions, considering the enormous demand for the finished product. The United States Census of Manufactures of 1905 enumerates 24,508 wage-earners employed in this industry, but of this number only 12,343 were adult males, while 10,072 were women and 2,093 children under 16 years of age. As pointed out in a report on this industry by Mr. Edward Stanwood, expert special agent of the census, "Hardly any general class of manufactures is more difficult of treatment, either as a whole or in detail, than that of flax, hemp, and jute. The materials are closely allied, in that they are all vegetable fibers, and in that two and sometimes all three are used in the same establishment and not infrequently introduced into the same fabric. Yet the products are so diverse, ranging from gunny bags and ships' hawsers to fine toweling and sewing thread, that the propriety of embracing all these varied industries in a single class, which seems so evident when materials only are considered, practically disappears." "A list of the products includes yarn and twine made from each one of the three fibers; linen thread; woven fabrics, partly or wholly of linen; rope and binder twine of manila or of sisal, or of the two mixed; gunny bagging, jute burlaps, carpets, rugs, and other minor products."(a)

(a) Census of Manufactures, 1905, Part III, p. 187.

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Of these products the manufacture of cordage and twine and of jute and jute goods will be separately considered, so that it is only necessary here to refer briefly to linen manufacturers and important processes necessary for the manipulation of flax. The linen manufacture is a very limited one in the United States, since the census only enumerates 15 establishments, giving employment to 3,811 wage-earners, and of this number only 1,260, or 33.1 per cent, were adult males. As stated in the census report, "Relatively little attention is given to the preparation of the flax fiber for manufacture, and that which is prepared is adapted only to the coarser processes. Imported material is employed almost exclusively in the spinning of yarns and the weaving of fabrics in the United States. There has never been a successful attempt in this country to produce fine goods at a profit."(a)

The material used in linen and thread manufacture is the fibrous portion of the flax plant, which, in this country, for reasons which do not require to be discussed, is chiefly cultivated for the seed. The preliminary processes are pulling, threshing, and retting, necessary to prepare the flax straw for the breaking and scutching processes. The scutching process, whether by hand or machinery, is an exceedingly dusty occupation, subject, however, to material modification by effective ventilation stacks which carry off much dust which would otherwise pollute the atmosphere of the room. With the subsequent processes begins the linen manufacture proper, and the first operation is called "heckling," which also may be performed either by hand or machinery. Heckling is also an exceedingly dusty process, and the conditions are not much better in the subsequent operation of sorting. Spreading and drawing are intermediary processes, previous to the sliver being taken to the roving frame, after which the fiber is ready for spinning, which for practical purposes conforms to the mule spinning operations in cotton mills, although the amount of dust generated during this process is probably greater. Spinning is followed by reeling, drying, warping, sizing, beaming, and drawing in, previous to the final process of weaving, all of which are operations practically indentical with the corresponding process in cotton manufacture.

Referring to the health-injurious circumstances of particular employments in flax and linen manufacture, Bevan, in his treatise on Industrial Classes and Industrial Statistics of the United Kingdom, gives a very vivid descriptive account, which is reproduced in part as follows:

Heckling, which is performed by girls and boys, is always a very dusty operation, and requires a good deal of continuous labor. In the

(a) Census Manufactures, 1905, Part III, p. 191.

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report of Bridges and Holmes, it is said that "the ill effects of the heckling efforts upon the boys (technically called machine boys) engaged in it are shown in spasmodic attacks of cough, during which the boy generally holds on to the machine to assist the efforts of coughing; an effort so familiar to workers that a boy who is observed doing so is said to be 'poucey,' from the 'pouce' or dust by which the cough is provoked. This dust is both fibrous and granular, but the latter very largely preponderates. It is for the most part a fine, soft, and palpable powder, proceeding evidently in great part from the putrefying process to which the flax plant has been subjected. Mixed with these organic particles there is, doubtless, a considerable portion of pulverized mud." This peculiar affection is spoken of as being very common in the Belfast mills.(a)

In the preparation of the flax a separation is made of the short and coarse fiber, which is known as tow and which contains the largest quantity of dust, dirt, and woody fiber. Bevan states that after being sorted tow "is carded just like cotton, except that it is on a rougher scale, and makes infinitely more dust. The tow-carding room is the worst place in the mill, and the clothes of the workers are generally loaded with the dust which floats thickly through the room, notwithstanding the adoption of powerful exhaust fans in the roof or the external walls. What with the dust and the damp from the steam jets, it is the most unhealthy employment in flax spinning; but, though efforts have been repeatedly made to induce the women to wear respirators, it has been without success."

The dusty condition of the workrooms in tow manufacture is not, however, the only objectionable feature in this branch of the industry, for in the practice of wet spinning the rove of the tow is drawn through a trough of warm water, which results not only in an exceedingly warm atmosphere, but also a very damp one, owing to the spray which is sent off from the spindles. Unless atmospheric conditions are regulated with great care the health of employees is seriously affected, particularly in the case of women. The following quotation gives the opinion of Bevan regarding the injurious conditions in the manufacture of flax products:

The flax trade is the most unhealthy, and no person should work in it who has any pulmonary weakness. Doctor Purdon says, in his evidence, that "nearly three-fifths of those that die annually in this trade are taken off by diseases of the respiratory organs. In the preparing rooms, the death rate from chest affections is exceedingly high, being 31 per 1,000, and amongst the hecklers the deaths annually amount to 11.1 per 1,000, amongst the weavers to 9 per 1,000. In wet spinning the children often get their clothes wet with the spray that comes off from the spindles, and on coming out of the hot room with their clothes damp in the evening, it brings on bronchial affec-

(a) In this connection reference may be made to the recently published report of the Belfast Health Commission to the Local Government Board of Ireland, p. 95. Dublin, 1908.

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tions." The same observer states that the average life of flax carders is 45.7 years, and the average length of time employed 16.8 years; of preparers, average of employment, 28.7; of dressers, average of employment, 16.6. From an analysis of the fiber it seems that 100 parts of flax contain 13 of silica. From the preceding facts it would appear that the Belfast mills are not in that state of sanitary arrangement in which they ought to be.(a)

These statistical references must be used with caution, since they refer to an earlier period, when conditions were less satisfactory than they are at the present time.

The unfavorable conclusions of Bevan regarding the health-injurious conditions in flax and linen manufacture are fully sustained by numerous investigations which have been made during the last fifty years. The earliest qualified inquiry was made by Doctor Greenhow, and was included in the privy council's medical report for 1860. Doctor Greenhow's report is of special value in that attention is called to the differences in the health-injurious quality of different kinds of flax dust, and from his observations the following extract is made:

Of the several processes carried on in flax mills, hackling, carding, and line preparing are more or less dusty, so that the atmosphere of the rooms in which they are going on is loaded with dust in proportion to the quality of the flax that is being manufactured and the means employed to prevent the dispersion of the dust into the air and its inhalation by the operatives. Several varieties of flax, named from the places whence they come, are manufactured in this country. The most common are the Dutch, Baltic, Irish, French, and Flemish, which yield dust in the process of manufacture in the order in which they have been named, the Dutch being the most, the Flemish the least, dusty. Flax is also imported from America and India, both of which varieties are said to be very dusty. There are, moreover, several varieties of each kind of flax which differ materially from one another; and it is said that, independently of other circumstances, the mode of preparing the flax causes a difference in the dustiness of the article when it comes to be manufactured, that which has been prepared by exposure to rain upon the grass being less dusty than such as has been steeped in water. The manufacture of the refuse from the hackle, called tow, which is spun into coarser material, is likewise attended by much dust. The danger to health will differ in different manufactories, according as the least or the most dusty kind of flax is manufactured. Several operatives asserted that they had not suffered sensibly in health from their occupation until they worked in Dutch flax, when the inhaling of the dust soon caused bronchial irritation. Of the several above-named processes, hand hackling is the most pernicious; this process has now been partially superseded by machine hackling, which, though still often injurious to the health of the operatives, is decidedly less so than the former. There is likewise a considerable quantity of dust

[a] Bevan's The Industrial Classes and Industrial Statistics, Volume on Textiles and Clothing, p. 44.

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given off in the processes of carding and line preparing, from which the operatives suffer in proportion to its amount.

After emphasizing the great value of an effective system of ventilation, Greenhow includes a discussion of the pathology of dust inhalation in flax and linen factories, which is one of the most valuable references on the subject, and which, in part, reads as follows:

The effects of exposure to the dust of flax are manifested upon the mucous membranes. The stomach is very apt to become deranged by the dust swallowed, and hence the flax operatives, more particularly the hacklers, often suffer from dyspepsia, and are sallow and look sickly; the eyes often become sore, the margins of the eyelids being swollen and inflamed, and the sight is said occasionally to become impaired. But the most serious effect is produced on the mucous membrane of the air passages; oppression of the chest, followed by dyspnœa, cough, and eventually by expectoration, are ordinary results of inhaling air charged with the dust of flax. Epistaxis is an occasional, and hæmoptysis a very frequent consequence of the same cause. It is remarkable that dyspnœa, sometimes of an asthmatic character, often long precedes the accession of cough and expectoration, or perhaps, more properly speaking, the cough and expectoration are in the beginning too slight to attract the notice of the sufferer, whilst the dyspnœa reminds him of its presence whenever he attempts brisk locomotion. As has already been said, many of the flax operatives forsake the occupation at an early age on account of the injurious influence it exercises over the health; but though this is true, the injury to health is commonly very gradual, and constant discomfort and serious disease only become established toward middle life, men employed in any dusty department of the manufacture rarely attaining the age of 45 or 50 years without suffering more or less severely from bronchial disease.

Efforts to induce workmen and women to use respirators had been a failure, although out of 107 persons medically examined 79 were suffering from some degree of bronchial irritation, ascribed to the unhealthy nature of the employment. While some had attained to quite advanced age, Greenhow points out that—

Notwithstanding that men at ages so advanced as 60 years and upward are sometimes found working as hand hacklers, the attainment of this age must, from the all but universal statements of both employers and operatives, be deemed exceptional. It was stated by manufacturers, foremen, overlookers, and the operatives themselves that working in the more dusty departments of the manufactory rarely fails to make itself felt toward middle life, few persons being able to work in an atmosphere loaded with the dusty particles for twenty years continuously without sustaining serious injury to health. The health of the women employed in the line-preparing room of another factory was inquired into in the manner adopted with regard to the hacklers, already mentioned. It is always difficult to obtain direct evidence from female operatives; but the inquiry showed that all those who had worked for a considerable length of time in this branch of manufacture were asthmatical, and that several of them had suffered from haemoptysis. The operatives employed in the

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carding rooms, unless the machines be properly protected to prevent the dispersion of the dust, frequently labor under habitual dyspnœa, cough, and expectoration; and it is especially in the carding rooms that the operatives are accustomed to tie up their mouths to prevent them inhaling the dust. The effect on a healthy stranger of entering these rooms is most unpleasant; the dust floating in the atmosphere irritates the nasal and bronchial passages, producing sneezing and a sense of oppression in the chest, which do not cease until some time after the visitor has left the apartment. The manager of a large factory asserted that remaining for any continuance in one of the carding rooms invariably produced in him, for a time, all the symptoms and sensations of catarrh.(a)

While the observations of Greenhow pertain to an early period, they apply to present-day conditions, although some improvement has been brought about in the meantime as the result of rational factory legislation. The continuous observation of actual conditions and the frequent qualified inspections made by medical inspectors of flax and linen factories in the United Kingdom have warranted from time to time modifications in the rules governing the conditions of employment, and these were finally amended in 1906 with special reference to processes of spinning and weaving flax and tow and the processes incidental thereto. Among other provisions, it is required that "in every room in which roughing, sorting, or hand hackling is carried on, and in every room in which machine hackling, carding, or preparing is carried on, and in which dust is generated and inhaled in a quantity calculated to cause injury to the health of the employees, a sufficient exhaust should be provided to insure that the dust is drawn away from the workmen at or as near as possible to the point at which it is generated." These regulations governing flax and linen manufacture in the United Kingdom at the present time were carried into effect upon the results of a special investigation made by Hamilton P. Smith, one of His Majesty's superintending inspectors of factories, of the conditions of work in flax and linen mills as affecting the health of operatives employed therein, and from which, in part, the following is quoted, with special reference to the dust problem.

In roughing, sorting, and machine and hand hackling rooms, and in all preparing rooms, the source of danger to health lies chiefly in the fact that large quantities of dust of an injurious nature are generated in the processes of manufacture, and accumulated testimony shows that the workers suffer in health. The raw material after leaving the scutch mill is subjected to the process of combing, laying parallel, and sorting the fibres of flax. This is done partly by hand and partly by machinery. Taking a rough handful or strick of rough flax, the operative by a swinging motion dashes the fibers onto the vertical needles forming the rougher or hackle. The

(a) Privy Council Medical Report, 1860, pp. 148–152.

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fiber is drawn through these teeth, separating inferior and short fibers from the better ones and leaving "tow" as the residual. The subsequent processes of hand hackling and sorting are, so far as our purposes are concerned, practically the same. The amount of dust varies according to the condition of the material, but in all much of an injurious nature is given off.(a)

The report calls attention to the fact that even at the present time in not a single instance, either in hand-hackling rooms or in machine-hackling rooms, are respirators provided for the use of workmen, and it is suggested that a special rule be adopted making it mandatory that "suitable and efficient respirators shall be provided for the use of the persons employed in roughing, sorting, hand or machine hackling, preparing, and carding." In the inspector's opinion, "Cloth of open texture, made of fine yarn of woolen material, capable of being easily washed, makes an excellent respirator, which can be worn with advantage and without discomfort."

A special investigation into the conditions of work in flax and linen mills, including a thoroughly qualified scientific analysis of the air in flax mills, was made by the Pathological Laboratory of Louvain, the center of the flax industry in France. This investigation proved that the chief constituent of flax dust is mineral matter, the proportionate amount of which varies with the condition of the flax in the different processes, being largest during the process of carding, where it was found to be about four times as large in flax dust as in the outside atmosphere. In addition, it was ascertained that the number and proportion of micro-organisms in flax dust were enormously in excess of the corresponding proportion found in the outside atmosphere, the excess being most pronounced in the dust produced during the hand hackling. The dusty processes in the order of their importance were determined by this investigation to be, first, carding; second, machine hackling; third, preparing; and fourth, hand hackling. Those containing the largest amount of micro-organisms, in the order of their importance, were, first, hand hackling; second, carding; third, machine hackling; fourth, preparing; fifth, spinning; and sixth, reeling. The cause of the injurious nature of the flax dust previously referred to as being very largely of mineral origin was ascertained to be the considerable proportion of silica. The health-injurious conditions in the different rooms were discussed briefly, as follows:

The hackling rooms, both hand and machine, are described as very dusty. Their condition explains the ill health of the workers and the rapid elimination of the workers which takes place. As an additional cause, reference is made (with quotations from the writings of

(a) Report upon the Conditions of Work in Flax and Linen Mills, by Hamilton P. Smith, p. 10. London, 1904.

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the late Dr. C. D. Purdon, of Belfast, and Doctor Arlidge) to the arduous nature of the work in the machine-hackling rooms, the nature of the work not admitting of a moment's relaxation on the part of the boys employed.

The carding rooms are described as so dusty that the workers appear to work constantly in a mist. It is held to be the most unhealthy occupation from which results a rapid elimination of workers, only those of strong constitution being able to continue at it. Despite this, the unhealthy nature of the work leads to illness frequently and causes others to abandon the work. The average duration of employment is the shortest, and yet the sickness among the workers is the greatest. As possibly causing the dust of the carding rooms to be more injurious than that of any other, reference is made to the metal particles which must be present in the air from the wearing away by friction of the numerous teeth on the carding machines.

Work in the preparing rooms is not considered to be comparable as regards injury to health with those described, and it is pointed out that the figures as to the amount of dust and of micro-organisms present in the air are to some extent vitiated by the fact that carding and preparing are sometimes carried on in the same room.

Reeling is not an injurious occupation; what injury to health there is arises from the humidity of the atmosphere. As a subsidiary cause of ill health in these rooms, is the fact that some of the machines are only capable of being kept in motion by the foot being pressed continually on a bar underneath the machine. This necessitates continuous strain on the muscular system.[a]

It is a matter of regret that there should be no very conclusive statistical data regarding the apparently very serious health-injurious effects of linen and thread manufacture, and in the absence of such data, especially for the United States, no definite and conclusive opinion would be warranted, although the general observations sustain the conclusion that the labor conditions in this industry are very far from being what they should be to reduce the health-injurious effects of the various employments to a minimum.

HEMP AND CORDAGE MANUFACTURE.

The manufacture of cordage ranks first in the group of miscellaneous textile products, but the industry never has attained to as large proportions in the United States as the home market alone would seem to warrant. With the introduction of machinery the earlier ropewalks have nearly disappeared and conditions otherwise

[a] Report upon the Conditions of Work in Flax and Linen Mills, by Hamilton P. Smith, appendix 7, pp. 22, 23. London, 1904.

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in this employment have undergone material changes. In the ropewalks very common to an earlier period it was the practice, according to Clark, for a man to walk forward and backward, spinning from the hemp around his waist, the twist being imparted from a wheel turned by a boy. Occasionally this practice is still followed at the present time. That the employment was more or less injurious to health is pointed out by Thackrah, and commented upon in Hall's Journal of Health in 1832, where it is stated that "ropewalkers suffer inconvenience from their stooping position." In the modern rope factory the twist is imparted by rapidly rotating machinery similar to that used in textile mills generally, making it possible, in the words of Clark, "to spin a rope several thousand feet in length on an upright apparatus occupying but a few square feet."

The descriptive account of the processes and circumstances under which the work is carried on fully sustains the view that a not inconsiderable amount of dust is generated during practically every important process, and without question more or less to the injury of the health of the employees. In discussing the hygiene of this occupation much emphasis is placed upon the specific processes necessary for the successful preparation of the hemp, flax, jute, and other fiber. The subject is referred to in a special report of the Massachusetts state board of health, which is in fact the only really trustworthy account of present-day conditions in this employment. Referring to the manufacture of cordage, twine, carpet yarn, and gunny bags the report states that:

The raw material in various forms comes in bales, which are opened and shaken apart, and the contents are then treated according to their nature. Ordinary jute and hemp, after being shaken out, are run through softening machines, in which they are moistened with an emulsion of oil and water, preparatory to carding. Old rope, gunny bagging and twine are run through machines which pick the fibers apart as a preliminary to other processes. Opening, picking, softening and carding are processes which are exceedingly dusty, and the dust is very irritating to the air passages. The machines which straighten and twist the fibers also give rise to much dust.

Arlidge reports upon the conditions in this employwment as follows:

The manufacture of rope and other cordage, formerly carried on after a primitive fashion in "ropewalks," to be found in every town, has become greatly transformed by the introduction of machinery. The great rope-making establishment at Belfast has almost annihilated every ropewalk in Ireland, and seems in a fair way of doing the same thing for England.

The hemp, Russian or Manila, is worked on the same general lines as flax. It has first to be sorted and picked over by girls, hand-roughed and heckled, then carded and a sliver formed, which, after a certain degree of twisting in the roving frames, is submitted to the spinning machines. Both the wet and dry processes are used, the

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former principally for the fine yarn. The spun yarn is next taken to large tanks of boiling tar, through which it is slowly passed; this done, the superfluous tar is pressed out between iron rollers, and the yarn afterwards slowly dried. The next business is the twisting of the yarn into strands, on the old ropewalk principle, but by the aid of machines. Cord made from harsh fibers has to undergo a scouring process, prior to sizing and polishing, to fit it for market.

This outline of the processes conveys the general hygienic features of rope making, and at two points at least, viz, in the sorting and the heckling and preparing rooms, the evil of dust arises just as in working flax for linen, in no small degree, with its inevitable consequences to the respiratory organs.

Parry also refers to this occupation, and with special reference to health-injurious consequences incidental to the manufacture of rope or cordage. He points out that—

Hemp is used for ropes, cords, and carpets. The manufacture is much the same as jute. No heckling machines are used. In carpet making the hemp is cut into 12-inch lengths, oiled, and then scutched, carded, and arranged in slivers. The coarse fibers and woody matters are removed, and the rest converted into tow. The slivers are made into large bales, which are again passed through the finishing card, by which fresh tow is separated. Wool is also an important ingredient in this industry. After the hempen foundation is made, short-fibered coarse wool, wound on bobbins, is woven in. All these processes produce dust of hemp and wool; especially is this noticed during the emptying of the tow box, and also during the dressing process, particularly of hemp imported into this country.

The hemp must be sorted and picked over, hand roughed and heckled; then carded and a sliver formed, twisted and spun either by the wet or dry process. In all the early stages, especially sorting and heckling, dust is produced just as it is in linen making.

Contrasting present-day conditions in rope manufacture with the earlier and very primitive processes common to all ropewalks, it is somewhat doubtful whether the change to the almost universal use of machinery has been really a benefit to the occupation. The necessity of walking forward and backward in the old-fashioned ropewalk no doubt was of great value as a matter of mere physical exercise, but no conclusive observations have been made a matter of record which would warrant a definite opinion as to whether conditions at the present time in ropewalks are better or worse than those prevailing at former periods.

The occupation mortality statistics of cordage workers are limited to English sources since no data have been made public regarding the mortality of this occupation in the United States. The number of male wage-earners employed in this industry in the United States in 1905 was 8,646, a sufficient basis for a safe generalization if the necessary mortality data were available. The reference to the mortality of rope makers in the Supplement to the Sixty-fifth Annual

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Report of the Registrar-General for the three years ending with 1902 is in part as follows:

The number enumerated in this occupation was only 6,255 at the last census, the number being too small to warrant detailed examination. As compared with the standard for occupied and retired males the death rates fluctuate widely. In the main working time of life the comparative mortality figure is 910, or 9 per cent less than the standard, and under each heading except phthisis they suffer less than the average mortality.(a)

The recent English statistics for this occupation are quite conclusive of the unfavorable effects of the employment on health at ages 20 to 34 and at 55 or over. In the table which follows a comparison is made of the mortality from all causes of men in this group with occupied males generally, and while the differences are not very pronounced at the earlier ages, they indicate the facts at least with approximate accuracy, and the comparison is, therefore, quite suggestive.

MORTALITY FROM ALL CAUSES AMONG MALE CORDAGE MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for male cordage makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.20	− 0.24	90
20 to 24 years	4.41	5.75	+ 1.34	130
25 to 34 years	6.01	6.47	+ .46	108
35 to 44 years	10.22	7.45	− 2.77	73
45 to 54 years	17.73	13.03	− 4.70	73
55 to 64 years	31.01	32.49	+ 1.48	105
65 years or over	88.39	105.86	+17.47	120

The preceding table is self-explanatory and requires no further comment. A more extended comparison, however, is made in the next table, in which the mortality of cordage makers from consumption is compared with the normal mortality of occupied males, by divisional periods of life. The comparison shows that the mortality from consumption is excessive at ages 20 to 34 and 55 or over, or at the same age period at which the general death rate of cordage makers is in excess of the normal mortality of occupied males.

(a) Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxxxix.

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MORTALITY FROM CONSUMPTION AMONG MALE CORDAGE MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for male cordage makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.24	−0.30	44
20 to 24 years	1.55	2.09	+ .54	135
25 to 34 years	2.03	2.59	+ .56	128
35 to 44 years	2.74	2.48	− .26	91
45 to 54 years	3.04	1.18	−1.86	39
55 to 64 years	2.16	3.77	+1.61	175
65 years or over	1.11	1.50	+ .39	135

The industrial insurance mortality experience of rope makers is limited to 109 deaths from all causes. Of this number, 28, or 25.7 per cent, were from consumption, and 9, or 8.3 per cent, were from respiratory diseases other than consumption. Of the deaths from other respiratory diseases, 6 were from pneumonia, 1 from asthma, and 2 from bronchitis. The following table gives an extended comparison of the mortality of rope makers from consumption with the normal mortality of all males in the registration area of the United States for the seven-year period 1900 to 1906.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG ROPE MAKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for rope makers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of rope makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Rope makers.	Males in registration area, 1900 to 1906.
15 to 24 years	12	6	50.0	27.8
25 to 34 years	18	9	50.0	31.3
35 to 44 years	17	7	41.2	23.6
45 to 54 years	18	6	33.3	15.0
55 to 64 years	24	.....	.....	8.1
65 years or over	20	.....	.....	2.7
Total	109	28	25.7	14.8

These statistics show an excessive mortality from consumption among rope makers, and this excess is specially high at the younger ages. One-half of the total mortality was due to consumption at ages 15 to 24 and 25 to 34, against an expected proportion of 27.8

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and 31.3, respectively. While the statistics are limited to comparatively small numbers, the facts are decidedly suggestive of health-injurious conditions in the rope-making industry.

The observations and statistical data regarding the mortality of cordage makers, while not entirely conclusive, indicate with at least approximate accuracy the high degree of consumption frequency at ages 20 to 34 and at 55 or over. It is quite probable that changes in occupation affect the official vital statistics of this trade to a sufficient extent to understate the true effect of the employment on health. There would therefore appear to be unfavorable conditions in this employment, doubtless largely due to the exposure to vegetable fiber dust, resulting in a comparatively high degree of consumption frequency among the employees.

MANUFACTURE OF JUTE AND JUTE GOODS.

The manufacture of jute and jute goods in 1905 gave employment to 6,083 wage-earners, but of this number only 2,437 were men, while 3,083 were women, and 563 were children under 16 years of age.(a) The industry is practically new in the United States, and as yet only a beginning has been made in its development, but it is significant that there has been an increase of 50 per cent in the number of wage-earners employed in the manufacture of jute and jute goods during the five years ending with 1905. No vital statistics have been published for this industry as it is carried on in the United States, but some reference will subsequently be made to the official statistics of Scotland, where the industry has attained to very considerable proportions.

A brief description of jute manufacture was included in Bevan's account of the manufacturing industries of the United Kingdom, and while the description is of somewhat early date it applies to present-day conditions, which in the meantime have not undergone a material change:

> Formerly jute used to be spun as flax, which it resembles in fiber, though much coarser. It was heckled, so as to get as much as possible of the fine fiber, and separate it from the coarse. The latter, however, so greatly predominated that it was found to be a useless expense, and it was, therefore, treated like tow, and placed at once in the carding engine. As it is even coarser than tow, one would naturally think that more dust would arise, and that the trade would surpass the flax trade in unhealthiness; but this is not so, owing to the necessity for saturating the jute with oil, so as to make the coarse and brittle fibers flexible. Its very roughness, therefore, has proved a sanitary safeguard to the workers.

Bevan enumerates 20 subdivisions of labor in jute manufacture, but he does not enlarge upon the health-injurious conditions inci-

(a) Census of Manufactures, 1905, Part III, p. 190.

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dental to the different employments. On the whole, however, the subdivisions of labor in jute manufacture correspond to those in textile manufacture generally The most serious factor injurious to health in jute manufacture is the dust problem, which under most favorable circumstances, however, is subject to material modification. The dust of jute under the microscope, according to Oliver, shows "vegetable fibers which are often torn and ragged and therefore with difficulty detached from the bronchial mucous membrane."

The hygiene of this employment has been discussed by various authorities, and an excellent account of the conditions affecting the health of persons employed in jute manufacture in Dundee, Scotland, was contributed to Oliver's "Dangerous Trades," by Mr. Harry J. Wilson, one of His Majesty's inspectors of factories, from which in part the following extracts are made, emphasizing the more dusty processes of this occupation:

The first operation in the process of the manufacture of jute consists in cutting the binding ropes of the bale and opening out the hard, compressed material. This is invariably done by hand, and immediately afterwards the fiber, still in a compressed state, is passed through between four heavy deeply-fluted rollers intersecting each other, which open the material somewhat and facilitate its disentanglement, before it is placed on the feeding table of the softener. During these processes, while the fiber is in a dry condition, a considerable quantity of dust is shaken out, much of it being of a gritty nature and consisting largely of fine particles of the sand or mud in which the plant grows. The latter impurities adhere to the rooty portion of the plant, but becomes dispersed when the fiber is shaken out and disturbed. It is in this dust that tetanus spores have been found in very considerable quantities. * * * As matters at present stand, the preparing operations in jute factories are much more dusty than subsequent processes, but the particles thrown off in carding, drawing, and rove spinning are more of a light, fluffy nature, and prove less irritating to the respiratory organs than the gritty dust evolved in handling the dry jute. After the material has been effectively softened, and while in a slightly moist condition, it is fed into the "breaker" card. Here, owing to the splitting and combing action of the rapidly-running card teeth, many rooty particles and other impurities are removed, but the heavier matter falls below the machines, from which it is taken away periodically, so that only the lighter dust rises and is breathed by the operators.

The operations subsequent to carding evolve little dust relatively, but owing to the excessive speed of spinning-frame flyers and the friction on the yarn, very light, fluffy particles are continually rising in spinning rooms, so that the atmosphere becomes charged with extremely fine portions of fiber. All horizontal surfaces and the clothing and hair of the workers in these departments soon become coated with this dust.

The dirtiest and most objectionable processes in the manufacture of the material are undoubtedly those of preparing and spinning. The remuneration of the operatives in these departments is consider-

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ably less than that earned by the weavers. Thus a distinctly lower class of employees engage in the former processes, the more self-respecting taking up weaving as a means of livelihood.

Where the finer qualities of fiber are treated, the amount of dust evolved is comparatively small, and the factories fairly clean; but in the coarser varieties it becomes excessive and the whole premises assume a dirty and objectionable aspect. It may be of interest to observe here that many women engaged in the preparing and spinning operations of jute manufacture habitually snuff, presumably to rid the nostrils of dust. The custom is rarely observed among women outside Dundee.

The prevention of the dispersal of dust in carding and spinning is extremely difficult, for it appears to rise, more or less, from the fiber, wherever it is sufficiently disturbed, and from any number of points, even in one room. Exhaust fans, however, when placed immediately above the softening machines and properly erected, undoubtedly remove much of the fine, gritty particles shaken out of the raw material, and where a hood is arranged above the exact seat of dust production and communicates with a fan, there is little to complain of.

This particular dust from the raw material is most irritating to breathe, and is presumably injurious, but fortunately few persons in any one mill come in contact with it.

To quote further, the following remarks refer to the high temperature and other conditions injurious to health in jute spinning rooms:

Unquestionably the high temperatures of spinning rooms are distinctly harmful, perhaps more so than is usually imagined. In fact, the writer, from close observation of operatives in various parts of the country and in dissimilar industries exposed persistently to warm atmospheres, is of opinion that a general lowering of the health (in certain instances marked) very frequently follows such employment. The effects of constantly breathing warm air, quite apart from the liability to chills which such atmospheres engender, are worthy of closer study and scientific investigation. Certainly exposure to great radiated heat, if the air is not particularly warm, does not affect workmen in a similar manner.

The opinion of Wilson, based upon personal investigation, is to the effect that the weaving of jute is apparently a healthy occupation, judging from the general appearance of the operatives. Most of these operatives are women, including sack sewers, who as a rule present a ruddy and robust appearance. The disease liability of jute workers employed in spinning and preparing rooms to pulmonary diseases is also discussed by Wilson, who incidentally comments upon other factors injurious to health as follows:

Investigations reveal a predisposition among factory workers, and particularly those employed in spinning and preparing rooms, to develop respiratory troubles, broncho-pneumonia, chronic bronchitis, and pulmonary emphysema being the most prominent. There is also a singularly large number of patients admitted to the local infirmary suffering from lobar pneumonia. Rheumatism is an extremely common ailment, and can be partially accounted for by the great variations of temperature which operatives have frequently to withstand.

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Multiple tuberculous lesions are frequently observed in the children of the poorer operatives, and thus one finds from time to time young persons at work with portions of the hands amputated on account of scrofulous or tuberculous diseases of the bones. Slight deafness is widespread among jute operatives, but other textile workers may be afflicted in a similar degree. The excessive noise of jute-weaving looms and the persistent loud hum of spinning frames presumably account for much of this. The looms, owing to their large size and the weight and high speed of the shuttles, are particularly noisy. The possibility of the dust inducing the formation of an obstruction with the waxy secretion of the ear is not excluded. Indeed, the fine light particles of fiber readily accumulate in the external auditory canal.

A hoarseness or huskiness of voice is met with frequently, and is especially marked in preparing and spinning operatives. Whether this is due to overstraining of the voice, shouting above the noise of the machinery, or to dust irritation of the vocal chords has never been clearly demonstrated. Anæmia in its commonest forms is a frequent ailment among all the operatives, but doubtless careless and injudicious feeding contributes to this condition of health.

Wilson describes the occurrence of "mill fever," so called, which no doubt contributes in a measure toward a predisposition to respiratory and tubercular diseases, as follows:

An illness locally known as "mill fever" attacks about one-fourth of the persons who commence labor in factories for the first time. The symptoms make their appearance a few days after work is started and take the form of one or more of the following: Headache, backache, lassitude, thirst, and slight fever. The attack lasts about from three to four days and yields to antifebrile medicines, followed by tonics. It has been observed that the patients are usually young people and are frequently of weak constitution or badly nourished.

In summing up his conclusions this authority calls attention to the difficulty of differentiating with accuracy between the health-injurious effects properly to be charged to the industry and the effects of poor feeding and bad housing, which no doubt are of considerable importance in Dundee, since the low physical and social condition of the operatives in jute factories is admitted to be a marked feature of the industry. In conclusion, Wilson refers to the health conditions in jute manufacture in East India, where the industry has developed to large proportions, stating that:(a)

The reports of the inspectors of jute mills in East India show that the industry is considered there to have no particularly deleterious effects on health. The mills, however, are built with very high roofs and are largely open to the sky. The climate permits of this, and accordingly the ventilation gives no trouble. Another fact has to be borne in mind in comparing Indian operatives with those employed at home. The former are migratory, only remaining a year or two at the industry, and, presumably, insufficient time is given for any in-

[a] Mention may also be made here of a recently published report of the East India Factory Labor Commission, Vol. I, Parliamentary Paper CD-4292. London, 1908.

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jurious effects to betray themselves; whereas in Scotland the bulk of a lifetime is spent by a worker in a jute factory.

The conclusions of Wilson are fully sustained by other qualified observers, and an account by Arlidge of this employment is included in this review of qualified medical opinions regarding the health-injurious conditions in this industry:

In general principle the processes resemble those in use in making linen, but as the fibers of jute are coarser, longer, and more brittle than those of flax slight differences exist in the mechanical operations. Hackling is, of recent years, not employed, but the jute is at once sent to the carding machine. But what would be a most dusty and injurious operation is rendered comparatively harmless by the previous profuse sprinkling of the jute with water and train oil, for the purpose of rendering the fibers more flexible. This preparatory moistening and softening of the material is an advantage in the subsequent operations of preparing and spinning, by reducing greatly the amount of dust that this harsh substance would otherwise give off. Nevertheless, I have seen jute in the course of spinning give off much coarse dust, and should anticipate that could the statistics of the jute manufacture be got at they would, on the whole, exhibit still more insanitary results than do those of the linen trade.

It is only for Scotland that the vital statistics of workers in jute have been separately recorded, but it is somewhat doubtful whether employment in the industry is sufficiently permanent to warrant final conclusions. During the three years ending with 1892 there occurred in Scotland 132 deaths of jute workers ages 25 to 64, and of this number only 26, or 19.7 per cent, were from consumption. There also occurred 20 deaths from bronchitis, 15 from pneumonia, and 4 from other respiratory diseases, a total of 65 deaths from diseases of the lungs and air passages, or 49.2 per cent of the mortality from all causes. In commenting upon the mortality of persons employed in the manufacture of jute, the Supplement to the Thirty-eighth Annual Report of the Registrar-General of Scotland states that diseases of the respiratory system and phthisis are especially prominent as causes of death, and that to these diseases may be added diseases of the nervous and circulatory systems. If, however, the general death rates of jute workers are compared with the corresponding mortality of males generally, the rates are rather below than above the average except at ages 15 to 19. This rather unexpected result is no doubt due in part to occupation selection, but as has been previously pointed out, the class of labor employed in jute manufacture in Scotland is of a decidedly low order. The details of the mortality for three years ending with 1892 are set forth in the following table, which has been abstracted from the report (p. lxxi) previously referred to:

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MORTALITY OF MALE EMPLOYEES IN JUTE MANUFACTURE IN SCOTLAND, 1890 TO 1892.

[From the Supplement to the Thirty-eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages of Scotland.]

Age.	Years of life.(a)	Deaths.	Rate per 1,000.	Rate per 1,000 for all employed males.
15 to 19 years	7,077	37	5.23	5.72
20 to 24 years	3,180	25	7.86	7.53
25 to 44 years	5,259	38	7.23	9.98
45 to 64 years	2,568	94	36.60	24.34
65 years or over	441	37	83.90	99.58

[a] The years of life as used in this table means three times the number of employees in jute manufacture enumerated at the census of 1891.

The Supplement to the Forty-eighth Annual Report of the Registrar-General of Scotland, published in 1905, comments at greater length upon this employment, and again the statistical data contradict some of the previously quoted medical conclusions unfavorable to the industry. According to the report, males in jute manufacture experienced death rates at ages 25 to 44 and 45 to 64 below the corresponding death rates of all males in Scotland. At ages 25 to 64 there occurred 145 deaths from all causes among jute workers, and of this number 26, or 17.9 per cent, were from consumption and other tubercular diseases, while 19 were from pneumonia, 12 from bronchitis, and 3 from other respiratory diseases, a total of 60 deaths from diseases of the lungs and air passages, or 41.4 per cent of the mortality from all causes. The facts in detail regarding the general mortality of jute workers, by divisional periods of life, for the three years ending with 1902, are set forth in the table below, which has also been abstracted from the report (p. cxxvii) previously referred to:

MORTALITY OF MALE EMPLOYEES IN JUTE MANUFACTURE IN SCOTLAND, 1900 TO 1902.

[From the Supplement to the Forty-eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages of Scotland.]

Age.	Years of life.(a)	Deaths.	Rate per 1,000.	Rate per 1,000 for all employed males.
15 to 24 years	12,213	57	4.67	.....
25 to 44 years	9,294	59	6.35	9.32
45 to 64 years	4,740	86	18.14	26.82
65 years or over	888	61	68.69	.....

[a] The years of life as used in this table means three times the number of employees in jute manufacture enumerated at the census of 1901.

The available statistical data do not warrant a definite conclusion at the present time, but the observed conditions in the industry suggest that the same may safely be classed among the dusty trades more or less injurious to health and predisposing to consumption.

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PAPER AND PULP MANUFACTURE.

The manufacture of paper and wood pulp, according to the census of 1905, gave employment to 65,964 wage-earners, the number of which had increased 33 per cent during the preceding five years. The industry is concentrated in large plants, in which, broadly speaking, the conditions of work, with particular reference to disease and exposure to other health-injurious circumstances, are more satisfactory than in small establishments. The industry has undergone a marked change within recent years, and the predominating material used in manufacture now consists of wood pulp, in place of linen rags, which in the past constituted the sole material from which paper was made. Among other materials which are at the present time employed in paper manufacture, aside from wood pulp, are chiefly rags, including cotton and flax waste and sweepings, manila stock, including jute, bagging, rope, waste, threads, and straw, which last is being employed to an increasing extent, including the rice straw of the Southern States.

The most important dust-producing material is rags, which, as a rule, however, are subjected to a preliminary sorting process outside of paper mills. A careful sorting process is necessary to eliminate colored rags, which are not adapted for white paper making, all of which is carried on in the rag and sorting rooms, which form the dustiest section of a paper mill. The sorting and the transfer of the rags to the cylinders in which they are boiled under high pressure with caustic soda are, according to Arlidge, the only important processes in which dust is set free except at the tear-up machines and to a limited extent in the bleaching department, where there is often a diffusion of the dust of bleaching powder, which, however, can be prevented by previously moistening it, which is often the case.

The health-injurious aspects of the industry are referred to in a report of the Massachusetts state board of health to the effect that—

> The operatives engaged in certain of the processes of paper making are exposed to considerable dust from rags used in the manufacture; those engaged in other departments are exposed more or less to wet; and those in still others are exposed to no industrial dangers whatever. The most important department of such a mill, from a sanitary standpoint, is the rag-sorting room. In most of the mills visited provision exists for carrying away, by mechanical ventilation, the dust arising from the handling of the rags; in some, no provision whatever is made. On account of the nature of the raw material, it is generally thought that there is some risk of infection of those who handle the rags, and smallpox is everywhere looked upon as one of the most important possible dangers of the paper industry. It would appear, however, from facts obtainable, that cases of infection traceable to the handling of rags are not common. In some of the establishments, it is said, the rag sorters are seldom sick. In the establishments visited operatives had generally the appearance of health and strength.

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In a subsequent report by the same authority the dust problem in paper manufacture is discussed at greater length, in part as follows:

The materials from which paper is made include rags, straw, old paper and wood pulp. Rags are derived chiefly from foreign countries, from which they are imported in bales compressed by hydraulic power. These are opened at the mill, and the contents are put into a closed, box-like structure, known as a "beater" or "thresher," containing a large wooden roller with iron "fingers," which revolve several hundred times per minute. This separates the rags and makes them thoroughly, giving rise to much dust, which falls between the iron strips of iron grating beneath the roller into a specially constructed receptacle, which may be cleaned out by hand or by means of an exhaust fan and dust pipe. During this process more or less dust commonly escapes into the room, and in some instances the amount is very great, partly because of the very dirty character of the rags [illegible]. From facts gathered with reference to this process in [illegible] it appears that, with the usual grade of stock, no matter what [illegible] "duster" or "thresher" is used, and in spite of exhaust [illegible] pipes, some dust will escape. With high-grade stock [illegible] work very well, while with low-grade stock the results are [illegible] satisfactory. Some very high-grade clean rags [illegible] dust.

In some mills the dust from the threshers is [illegible] This work is exceedingly dusty, and the men who [illegible] vided with respirators, which they appear to use with [illegible] Instance than is shown by those to whom they are supplied in dusty trades.

From the duster or thresher the rags are [illegible] through a chute to the sorting room, where they [illegible] with box-like tops provided with bottoms of [illegible] which dust and fine particles escape to [illegible]

The most recent English mortality statistics [illegible] are for the three years ending with [illegible] ment to the Sixty-fifth Annual Report of [illegible] part as follows:

At ages under 20 years paper [illegible] siderably above, and at ages over [illegible] for occupied and retired males [illegible] ard, the difference being [illegible] the main working period of life [illegible] 730, or 27 per cent below [illegible] enza, alcoholism, and [illegible] than half the standard, and [illegible] there is also an advantage [illegible]

The recent English [illegible] the paper industry do not [illegible] ployment on health, but [illegible] was below the average [illegible]

* Part II, [illegible] General of F[illegible]

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a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the comparison shows that it is only at ages 15 to 19, and 65 or over, that the general death rate of persons employed in paper manufacture exceeds the general average.

MORTALITY FROM ALL CAUSES AMONG **PAPER MAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for paper makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	3.46	+1.02	142
20 to 24 years	4.41	4.01	− .40	91
25 to 34 years	6.01	5.02	− .99	84
35 to 44 years	10.22	6.66	−3.56	65
45 to 54 years	17.73	11.05	−6.68	62
55 to 64 years	31.01	26.38	−4.63	85
65 years or over	88.39	94.80	+6.41	107

The preceding table is self-explanatory and requires no further comment. A more extended comparison, however, is made in the next table, in which the mortality of paper makers from consumption is compared with the normal mortality of occupied males from this disease, by divisional periods of life. The comparison shows that the mortality from consumption was below the average at all ages.

MORTALITY FROM CONSUMPTION AMONG **PAPER MAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for paper makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.54	.....	100
20 to 24 years	1.55	1.29	− .26	83
25 to 34 years	2.03	1.95	− .08	96
35 to 44 years	2.74	2.13	− .61	78
45 to 54 years	3.04	1.78	−1.26	59
55 to 64 years	2.16	1.86	− .30	86
65 years or over	1.11	1.02	− .09	92

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The foregoing comparison indicates a degree of consumption frequency below the average for paper makers, but the differences are not very pronounced and at certain periods of life are very slight. It is quite probable that occupation changes affect the accuracy of the official vital statistics and that the health-injurious effects of the industry are more serious than is disclosed by an analysis of the available statistical information regarding this employment.

The recorded industrial insurance mortality statistics of paper makers are limited to 115 deaths from all causes, of which 34, or 29.6 per cent, were from consumption. Of the mortality of paper makers from respiratory diseases other than consumption, 9 were from pneumonia and 1 was from bronchitis. There were 44 deaths of paper makers from consumption and from other respiratory diseases combined, or 38.3 per cent of the total mortality was due to diseases of the lungs and air passages. The excess in the mortality of paper makers from consumption is clearly brought out in the tabular presentation of the proportionate mortality from this disease, by divisional periods of life.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG PAPER MAKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for paper makers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of paper makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Paper makers.	Males in registration area, 1900 to 1906.
15 to 24 years	13	6	46.2	27.8
25 to 34 years	28	15	53.6	31.3
35 to 44 years	18	7	38.9	23.6
45 to 54 years	15	2	13.3	15.0
55 to 64 years	23	3	13.0	8.1
65 years or over	18	1	5.6	2.7
Total	115	34	29.6	14.8

While according to this table the consumption mortality of paper makers was excessive at all ages except 45 to 54, the excess was most pronounced at ages 15 to 44. At ages 15 to 24, out of every 100 deaths from all causes, 46.2 were from consumption, against 27.8 expected; at ages 25 to 34 the proportion was 53.6, against 31.3 expected; and at ages 35 to 44 the proportion was 38.9, against 23.6 expected.

CABINETMAKERS.

The occupation of the cabinetmaker is a well-defined and separate branch of carpentry practically limited to the manufacture of furniture, and men in this employment are often separately classified as furniture makers and repairers. Occasionally the classification in-

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cludes upholsterers, but since the exposure to health-injurious conditions is essentially different in the two occupations, such a grouping is not in conformity to the conditions under which the two employments are carried on. The census of 1900 returns the number of cabinetmakers at 35,641, but in addition the number of persons employed in furniture manufacture was 23,078. In the vital statistics of the census of 1900, however, cabinetmakers and upholsterers are combined into one group, but the mortality returns were limited to the registration States, giving the combined number of the two employments for known ages 15 years or over as 24,695. Among this number there occurred during the census year 446 deaths from all causes, or at the rate of 18.06 per 1,000 per annum, against a general average for all occupations of only 15.16. The mortality from consumption among cabinetmakers and upholsterers, according to the census, was excessively high, or 3.59 per 1,000, against 2.37 for all occupations, and 2.62 for the manufacturing and mechanical industries class. The consumption mortality of cabinetmakers and upholsterers was also decidedly in excess of the corresponding mortality of carpenters and joiners. While the consumption mortality rate for cabinetmakers and upholsterers was 3.59 per 1,000, as previously stated, the corresponding rate for carpenters and joiners was 2.31. It is also of interest to note that while among cabinetmakers and upholsterers the proportion of persons of ages 65 or over was 6 per cent, the corresponding proportion for carpenters and joiners was 7.9 per cent. If the two employments had been separately returned the value of the data would have been very materially increased. It is quite safe to assume, however, that of the two occupations, that of the upholsterer is more injurious to health than the employment of the cabinetmaker.

Qualified medical opinion is divided as to the health-injurious effects of the continuous inhalation of wood dust, but it is generally agreed that the dust of hard wood is more injurious than the dust of soft wood, and that the most injurious of all is the dust of so-called satinwood, or African boxwood, which, however, is used in only very limited quantities for special purposes, which will be referred to again under wood turners and other woodworkers subsequently to be mentioned.

Ramazzini held the opinion that workers in wood do not suffer any serious inconvenience on account of their employment, except those working in cypress, which produces headache, an opinion which does not seem to be confirmed by extensive experience in our numerous cypress shingle mills. At least no qualified medical opinion has been made a matter of record, to the effect that employees in cypress mills are subject to particularly injurious conditions. Thackrah, writing in 1832, refers to health-injurious consequences among men

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working in particular kinds of hard wood, and his opinion is here quoted, since it was fully confirmed by subsequent experience. "Cabinetmakers suffer from the dust when they saw African, cam, rosewood, and Spanish mahogany. The first of these is most injurious. Its dust produces sneezing, headache, sickness, and sometimes vomiting. This wood, however, is rarely used."

B. W. Richardson, M. D., also commented upon wood dust as more or less injurious to health and as a substance injurious to the lungs, stating that—

The dusts of some kinds of wood, to which turners of wood and fine cutters of wood are exposed, are causes of much irritation of the lungs and of bronchial cough. The dust is fine and penetrating, and when it is from colored wood it imparts its own peculiar color to the bronchial secretion. I have seen these phenomena, markedly in the case of mahogany carvers, in those who carve ornaments for couches and other articles of furniture. The work gives rise to a great quantity of wood dust, which is constantly inhaled. In carving, the artisan has to keep up a blowing process with the lips in order to blow away the small portions of wood which he removes with the chisel. This process is very wearying, but the chief complaint made by the worker is of the dust he draws back in inhalation. The mischief is greatly increased in the rooms where the ventilation is imperfect. The cough is usually attended with copious secretion from the bronchial tubes, and I have more than once known the loss from this cause so copious as to cause other symptoms of wasting and exhaustion allied to phthisis pulmonalis and constituting what has been called bronchial phthisis. As a rule, however, those who suffer from this form of disease recover when they are removed from their occupation and are placed in favorable circumstances for recovery.

More recent observations are by Parry, who refers to the employment of cabinetmakers, but who, in particular, considers the process of sandpapering and the resulting mixture of mineral with organic dust. In his opinion, "carpenters, joiners, turners, and cabinetmakers are exposed to the risks of breathing in wood dust; but the lung-disease death rate—337 compared with 402 for all males—does not seem to prove that much harm is caused by its inhalation."

Tracy refers very briefly to the occupation, and after stating that dust of vegetable origin is on the whole quite harmless, holds, regarding the effect of wood dust in particular, as follows: "The workmen who inhale vegetable dust do not as a rule suffer in consequence. The dust of wood, in particular, is so harmless that it seems more appropriate to speak of cabinetmakers and carpenters under another heading, as their attitude while at work has more to do in bringing on disease than the atmosphere they breathe. The dust of the hard woods, as mahogany, rosewood, etc., may cause slight irritation of he larynx and trachea and a tendency to bronchial catarrh."

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The annual reports of English factory inspectors contain frequent references to the health-injurious effects of African boxwood, or so-called satinwood, rosewood, etc., but since the manufacture of small articles in which this wood is used brings the employment more properly within the group of wood turners and carvers, the peculiar effects of the dust of this wood on health will there be considered in more detail.

As previously stated, the United States census returns combine the mortality of cabinetmakers with that of upholsterers; and the only official vital statistics are for the State of Rhode Island for the decade ending with 1906. The number of deaths of cabinetmakers recorded was only 50 from all causes, and of this number 12, or 24 per cent, were from consumption. The number of deaths from respiratory diseases other than consumption among men in this occupation was 9, which, combined with the mortality from consumption, returned 21 deaths from diseases of the lungs and air passages, or 42 per cent of the mortality from all causes. The corresponding percentage of deaths from consumption and from other respiratory diseases for all males in Rhode Island was 30.3 per cent.

The most recent English mortality statistics of cabinetmakers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

Cabinetmakers suffer more severely than all occupied and retired males at ages under 20 and above 65, but at all intermediate ages the death rates are below the standard, while at every stage of life they exceed those of carpenters. In the main working period the comparative mortality figure of cabinetmakers is 956, or 5 per cent, below the standard. They suffer less than the average from influenza, alcoholism, and liver disease, as well as from diseases of the nervous, circulatory, and respiratory systems; the mortality from accident is also low. On the other hand, among these workers both cancer and phthisis are more fatal than the average, and suicide is more common.(a)

The recent English mortality statistics for cabinetmakers are not quite conclusive as to the generally unfavorable effects of this industry on health. In the table which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and while the returns are not entirely conclusive they are suggestive of more or less unfavorable circumstances connected with the employment, since at ages 35 to 64 the departure from the normal is very slight and probably to a not inconsiderable extent the result of occupation changes more or less likely to impair the value of the available statistical data.

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a Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxxx.

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MORTALITY FROM ALL CAUSES AMONG **CABINETMAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for cabinetmakers.		
		Rate per 1,000.	Greater (+) or less (—) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.61	+0.17	107
20 to 24 years	4.41	3.73	— .68	85
25 to 34 years	6.01	5.20	— .81	87
35 to 44 years	10.22	9.84	— .38	96
45 to 54 years	17.73	17.34	— .39	98
55 to 64 years	31.01	30.65	— .36	99
65 years or over	88.39	82.99	—5.41	94

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of cabinetmakers from consumption is compared with the normal mortality of occupied males from this disease, by divisional periods of life. The comparison shows that the mortality from consumption was excessive at all ages, but in marked contrast to a low general death rate at ages 20 to 64. The corresponding death rates from consumption were excessive for cabinetmakers at all ages 15 or over. While the excess was not very marked, the departure from the normal is quite significant at ages 35 to 44.

MORTALITY FROM CONSUMPTION AMONG **CABINETMAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for cabinetmakers.		
		Rate per 1,000.	Greater (+) or less (—) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.69	+0.15	128
20 to 24 years	1.55	1.65	+ .10	106
25 to 34 years	2.03	2.18	+ .15	107
35 to 44 years	2.74	3.79	+1.05	138
45 to 54 years	3.04	3.83	+ .79	126
55 to 64 years	2.16	2.71	+ .55	125
65 years or over	1.11	1.86	+ .75	168

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The recorded industrial insurance mortality statistics of cabinetmakers include 817 deaths from all causes. Of this number 162, or 19.8 per cent, were from consumption. In the mortality from respiratory diseases other than consumption there were 75 deaths from pneumonia, 14 from asthma, 14 from bronchitis, and 17 from other less frequent respiratory diseases. Of the total mortality 34.5 per cent was from diseases of the lungs and air passages. The mortality from consumption was excessive at all ages, but most so at 25 to 34, when out of every 100 deaths from all causes 55.7 were from consumption against a normal expected proportion of 31.3. The analysis of the mortality from consumption in detail is presented in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG CABINETMAKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for cabinetmakers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of cabinetmakers 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Cabinetmakers.	Males in registration area, 1900 to 1906.
15 to 24 years	39	14	35.9	27.8
25 to 34 years	61	34	55.7	31.3
35 to 44 years	82	40	48.8	23.6
45 to 54 years	136	31	22.8	15.0
55 to 64 years	197	29	14.7	8.1
65 years or over	302	14	4.6	2.7
Total	817	162	19.8	14.0

The observations and statistical data regarding the mortality of cabinetmakers confirm the conclusion that the degree of consumption frequency in this employment is decidedly excessive, and without question directly connected with the health-injurious circumstances of the trade. The excess in the degree of consumption frequency is most marked at ages 35 or over, which would make it probable that the type of the disease as met with in this employment assumes, in many cases, the fibroid form, or that of a distinct occupation disease.

WOOD TURNERS AND CARVERS.

Wood turning and carving are industries in which the conditions affecting health and life are much the same as in cabinetmaking and other woodworking industries. The amount of wood dust inhaled is probably larger, but no very conclusive information is available, with the exception of the health-injurious effects of working on so-called African boxwood, or satinwood, much of which is used for shuttle making. The effects of the dust, however, are probably not as serious to the lungs as to the system generally, and the most im-

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portant effect of the dust of African boxwood is paralysis of the nerves. The whole subject was carefully considered before the commission on industrial diseases, and rules have been issued prohibiting the use of this wood, except under certain specified restrictions. The symptoms, as defined by Oliver, are similar to those occurring among cabinetmakers and joiners, who saw, chip, and otherwise manipulate the sequoia wood of our Pacific coast. It is stated that they resemble those exhibited by persons who are suffering from a bad cold in the head and chest, including irritation in the throat and bronchial tubes, accompanied by cough, labored breathing, and quickened pulse. The symptoms usually last only for a day or two and are usually seen only among men who are working with the wood for the first time. A tolerance seems to be established in regard to it, except in the case of men who are liable otherwise to bronchitis and asthma.

Oliver enlarges upon the subject and, after pointing out that certain kinds of wood have a bad reputation among joiners and that some sawdusts are more irritating than others, probably from the large amount of inorganic matter which they contain, he refers to conditions in Lancashire, where "the dust given off during the manufacture of shuttles for weaving purposes is a cause of malaise to the workmen employed. Many of them suffer from headache, coryza, excessive secretion of tears, and attacks of asthma." "The men who suffered presented a pale and jaundiced appearance; their breath had a peculiar camphor-like odor. Several of them had attacks of difficulty of breathing and of precordial pain accompanied by cold sweating. There was also marked slowing of the heart's action."

The health-injurious effects of wood working in hard woods, such as ebony and rosewood, have been recognized by different authorities on occupation diseases, and according to Arlidge of all woods rosewood produces the most obnoxious dust, emphasizing the fact that physical conformation and density of dust particles are not the sole factors governing the health-injurious effects on the human system.

The most recent English mortality statistics of wood turners and coopers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General in part as follows:

At every group of ages except 15 to 20 years, the death rate exceeds the standard for all occupied and retired males, the excess being greatest in middle life. In the main working period the comparative mortality figure is 1,181, or 18 per cent above the standard. From all the principal causes, except accident, the mortality exceeds the average. Wood turners and coopers are specially liable to phthisis, as well as to diseases of the respiratory system and to Bright's disease.

The recent English statistics of wood turners are quite conclusive of the unfavorable effects of this industry on health. In the table

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which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the result is decidedly suggestive of conditions in the trade more or less unfavorable to life and health. The excess in the general death rate of wood turners is met with at all ages, but is most pronounced at ages 45 or over.

MORTALITY FROM ALL CAUSES AMONG **WOOD TURNERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate of wood turners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	1.94	−0.50	80
20 to 24 years	4.41	4.46	+ .05	101
25 to 34 years	6.01	6.23	+ .22	104
35 to 44 years	10.22	11.69	+1.47	114
45 to 54 years	17.73	24.98	+7.25	141
55 to 64 years	31.01	34.70	+3.69	112
65 years or over	88.39	92.82	+4.43	105

The preceding table is self-explanatory and requires no further comment. A more extended comparison, however, is made in the next table, in which the mortality of wood turners from consumption is compared with the normal mortality of occupied males from this disease, by divisional periods of life. The comparison shows that the mortality from consumption was excessive at all ages, but decidedly so at ages 35 to 54, when the excess was 1.05 per 1,000 at ages 35 to 44 and 2.48 per 1,000 at 45 to 54.

MORTALITY FROM CONSUMPTION AMONG **WOOD TURNERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for wood turners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.63	+0.09	117
20 to 24 years	1.55	1.54	− .01	99
25 to 34 years	2.03	2.89	+ .86	142
35 to 44 years	2.74	3.79	+1.05	138
45 to 54 years	3.04	5.52	+2.48	182
55 to 64 years	2.16	2.96	+ .80	137
65 years or over	1.11	1.36	+ .25	123

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The recorded industrial insurance mortality experience of wood turners includes 127 deaths from all causes, of which 25, or 19.7 per cent, were from consumption. Of the mortality of wood turners from other respiratory diseases, 3 were from asthma, 2 from bronchitis, 11 from pneumonia, and 5 from less frequent diseases of this class. If the deaths from consumption and from other respiratory diseases are combined, 36.2 per cent of the mortality of wood turners was from diseases of the lungs and air passages. The number of deaths of wood turners included in this analysis is not quite sufficient for a final conclusion, but is decidedly suggestive of health-injurious circumstances destructive of life and health at an early period of life. The excess in the consumption mortality is more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. The comparison shows that the consumption mortality was decidedly excessive at all ages under 65, but most so at 15 to 34, when the proportionate mortality was 70 per cent at ages 15 to 24, and 62.5 per cent at 25 to 34.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **WOOD TURNERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for cabinetmakers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of wood turners, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Wood turners.	Males in registration area, 1900 to 1906.
15 to 24 years	10	7	70.0	27.8
25 to 34 years	8	5	62.5	31.3
35 to 44 years	17	3	17.6	23.6
45 to 54 years	24	4	16.7	15.0
55 to 64 years	33	5	15.2	8.1
65 years or over	35	1	2.9	2.7
Total	127	25	19.7	14.8

The recorded industrial insurance mortality experience of wood carvers may be separately considered, and the statistics available include 123 deaths from all causes. Of this number, 27, or 22.0 per cent, were from consumption, and 16, or 13.0 per cent, from respiratory diseases other than consumption. Of the mortality from other respiratory diseases, 9 deaths were from pneumonia, 2 from asthma, 2 from bronchitis, and 3 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 35 per cent of the total mortality of wood carvers is shown to have been from diseases of the lungs and air passages.

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The following table gives the details of the comparative mortality of wood carvers from consumption in the recorded industrial mortality experience:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG WOOD CARVERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for wood carvers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of wood carvers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Wood carvers.	Males in registration area, 1900 to 1906.
15 to 24 years	11	3	27.3	27.8
25 to 34 years	20	9	45.0	31.3
35 to 44 years	23	9	39.1	23.6
45 to 54 years	31	5	16.1	15.0
55 to 64 years	21	1	4.8	8.1
65 years or over	17	.....	.....	2.7
Total	123	27	22.0	14.8

The statistics for wood carvers do not show as great an excess in the mortality from consumption over the normal expected as was true of wood turners, but the excess is considerable, especially at ages 25 to 34 and 35 to 44. At ages 25 to 34, out of every 100 deaths from all causes 45 were from consumption, against 31.3 expected; at ages 35 to 44 the proportion was 39.1 for wood carvers, against 23.6 expected.

The observations and statistical data regarding the mortality of wood turners and wood carvers confirm the conclusions that the degree of consumption frequency in this employment is decidedly excessive and without question directly connected with the health-injurious circumstances of the trade. The excess in the degree of consumption frequency is most marked at advanced ages, which would make it probable that the type of the disease assumes in many cases the fibroid form or that of a distinct occupation disease.

SUMMARY OF CONCLUSIONS REGARDING OCCUPATIONS WITH EXPOSURE TO VEGETABLE FIBER DUST.

The occupations involving exposure to vegetable fiber dust have been considered in more or less detail. In this group, as in those exposing to metallic and mineral dusts, it has not been possible in all cases to base conclusions upon identical data, but the returns from the various available sources are sufficiently complete to be of considerable value. The census returns of 1900 give the age distribution of cotton-mill operatives, hosiery and knitting-mill operatives, paper and pulp mill

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workers, and cabinetmakers, the aggregate number of such persons being 184,245. This number is exclusive of males under 15 and of males of unknown ages. The statistics show that only 4,342, or 2.4 per cent, had attained to an age of 65 or over, against a normal expected proportion of 4.7. This fact is quite suggestive of conditions unfavorable to health and life in occupations exposing to vegetable fiber dust. The details of the age distribution are given in the following table, by divisional periods of life, together with the corresponding percentage distribution of all occupied males, the data for both groups being derived from the census of 1900.

NUMBER AND PER CENT OF MALES IN EACH AGE GROUP IN OCCUPATIONS EXPOSED TO VEGETABLE FIBER DUST, COMPARED WITH NUMBER AND PER CENT IN ALL OCCUPATIONS IN THE UNITED STATES, 1900.

[From report of the Bureau of the Census on Occupations, 1900.]

Age.	Males in occupations exposed to vegetable fiber dust.		All occupied males.	
	Number.	Per cent.	Number.	Per cent.
15 to 24 years	73,209	39.7	5,933,720	26.0
25 to 34 years	47,213	25.6	5,993,847	26.3
35 to 44 years	31,584	17.1	4,704,682	20.6
45 to 54 years	19,115	10.4	3,250,259	14.3
55 to 64 years	8,782	4.8	1,856,181	8.1
65 years or over	4,342	2.4	1,063,856	4.7
Total	184,245	100.0	22,802,545	100.0

According to this analysis, the proportion of persons aged 15 to 34 was 65.3, or nearly two-thirds of the total, against 52.3 expected. At ages 45 or over, the proportion was 17.6 for the group under consideration, against 27.1 for occupied males generally. This favorable age distribution is due to the fact that in the textile industries a considerable proportion of the employees are comparatively young persons, the work being such that no great amount of muscular effort is required.

It is, unfortunately, not possible to present a combined summary of the United States census vital statistics of persons employed in occupations included in this group, since the vital statistics of the census deal only with cabinetmakers and upholsterers. A comparison of the rates for cabinetmakers and upholsterers with the mortality rates of occupied males generally indicates an excessive mortality among cabinetmakers at ages 25 to 44 and at ages 65 or over. The death rate from consumption for cabinetmakers and upholsterers was 3.59, against 2.37 expected, and the death rate from other respiratory diseases was 2.54, against 1.97 expected. The details of the mortality by ages are given in the following table, together with the corresponding death rates for all occupied males, the data for both groups being derived from the census of 1900:

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MORTALITY FROM ALL CAUSES AMONG **CABINETMAKERS AND UPHOLSTERERS** IN THE REGISTRATION STATES, COMPARED WITH THAT OF ALL OCCUPIED MALES IN THOSE STATES, 1900, BY AGE GROUPS.

[From report of the Bureau of the Census on Vital Statistics, 1900.]

Age.	Cabinetmakers and upholsterers.			All occupied males.		
	Number employed.	Number of deaths from all causes.	Rate per 1,000 from all causes.	Number employed.	Number of deaths from all causes.	Rate per 1,000 from all causes.
15 to 24 years	4,135	19	4.59	1,259,471	6,486	5.15
25 to 44 years	12,239	128	10.46	2,680,241	23,541	8.78
45 to 64 years	6,825	135	19.78	1,282,259	25,532	19.91
65 years or over	1,496	164	109.63	283,310	27,888	98.44
Total	24,695	446	[a] 18.06	5,505,281	83,447	[b] 15.16

[a] From consumption there were 89 deaths, or a rate of 3.59. From other diseases of the respiratory system there were 63 deaths, or a rate of 2.54.
[b] The rate of mortality from consumption was 2.37; from other diseases of the respiratory system, 1.97.

The occupation mortality statistics of Rhode Island are available for five specific occupations included in this group, and when combined returned 927 deaths from all causes, of which 253 were from consumption and 87 from respiratory diseases other than consumption. The corresponding percentages were 27.3 of deaths from consumption for persons employed in groups with exposure to vegetable fiber dust, against 17.8 for occupied males generally in the State of Rhode Island. The percentage of deaths from other respiratory diseases was 9.4 for the occupations in this group, against 12.5 expected.

The English vital statistics for this group of occupations include textile operatives generally—hosiery workers, lace workers, cordage workers, paper-mill employees, cabinetmakers, and wood turners. When the statistics for these occupations are combined, they exhibit rather high death rates at all ages over 45. The details in tabular form are set forth in the following table:

MORTALITY FROM ALL CAUSES, FROM CONSUMPTION AND FROM OTHER RESPIRATORY DISEASES IN **OCCUPATIONS EXPOSED TO VEGETABLE FIBER DUST**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 due to all causes among—		Death rate per 1,000 due to consumption among—		Death rate per 1,000 due to other diseases of the respiratory system.	
	All occupied males.	Occupations exposed to vegetable fiber dust.	All occupied males.	Occupations exposed to vegetable fiber dust.	All occupied males.	Occupations exposed to vegetable fiber dust.
15 to 19 years	2.44	2.59	0.54	0.75	0.24	0.28
20 to 24 years	4.41	4.15	1.55	1.63	.48	.54
25 to 34 years	6.01	5.49	2.03	2.18	.77	.73
35 to 44 years	10.22	9.57	2.74	3.16	1.66	1.46
45 to 54 years	17.73	19.08	3.04	3.80	3.32	3.61
55 to 64 years	31.01	35.47	2.16	2.79	6.54	8.23
65 years or over	88.39	104.00	1.11	1.63	17.77	23.35

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The table shows that the mortality from consumption among males with exposure to vegetable fiber dust was excessive at all ages, but particularly so at ages 25 or over. The mortality from respiratory diseases, other than consumption, was about normal at ages 15 to 44, somewhat excessive at ages 45 to 54, and considerably above the normal expected at ages 55 or over.

The industrial insurance mortality statistics are available for eight occupations included in this group, returning in the aggregate 2,460 deaths of males from all causes at ages 15 years or over. Of this number 610, or 24.8 per cent, were from consumption. The deaths from respiratory diseases other than consumption numbered 326, or 13.3 per cent. The expected consumption mortality, on the basis of the mortality of males in the registration area of the United States for the seven-year period 1900 to 1906, was 14.8 per cent, and from other respiratory diseases 11.7 per cent. When the mortality from consumption and from other respiratory diseases is combined, the proportionate percentage of deaths of males in occupations with exposure to vegetable fiber dust was 38.0, against 26.5 per cent expected.

The following table gives the summary statistics in detail for the eight occupations in this group for which the industrial insurance mortality experience has been sufficiently large to warrant their inclusion:

PROPORTIONATE MORTALITY FROM CONSUMPTION IN **OCCUPATIONS EXPOSED TO VEGETABLE FIBER DUST**, 1897 to 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 to 1906, BY AGE GROUPS.

[Figures for occupations exposed to vegetable fiber dust from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths in occupations exposed to vegetable fiber dust, 1897 to 1906, due to—		Per cent of deaths due to consumption in—	
	All causes.	Consumption.	Occupations exposed to vegetable fiber dust.	Males in registration area, 1900 to 1906.
15 to 24 years	244	97	39.8	27.8
25 to 34 years	369	199	53.9	31.3
35 to 44 years	355	143	40.3	23.6
45 to 54 years	404	94	23.3	15.0
55 to 64 years	475	54	11.4	8.1
65 years or over	613	23	3.8	2.7
Total	2,460	[a] 610	[a] 24.8	[b] 14.8

[a] There were also 326 deaths from other diseases of the respiratory system, or 13.3 per cent of the deaths from all causes.

[b] The per cent of deaths from other diseases of the respiratory system in the registration area was 11.7.

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It is evident from the foregoing observations and statistical data relating to a representative number of employments with exposure to vegetable fiber dust that the effects of such exposure are decidedly health injurious. The summary table shows that the mortality from consumption among employees in this group of occupations is very much higher at all ages than would normally be expected.

OCCUPATIONS WITH EXPOSURE TO ANIMAL AND MIXED FIBER DUST.

In the group of occupations exposing to a continuous and considerable inhalation of animal and mixed fiber dusts resulting from necessary industrial processes have been included for the present purpose the following representative employments: Furriers, hatters, silk manufacture, woolen and worsted manufacture, carpet and rug manufacture, shoddy manufacture, rag industry, upholsterers and hair-mattress makers. These occupations are all more or less subject to an excessive death rate from all causes, but in particular to a decided excess in the proportionate mortality from consumption, and in most cases also to a comparatively high degree of frequency in the occurrence of respiratory diseases. The details of labor conditions, as far as they could be conveniently included in the following summary of observations regarding particular trades, appear to fully confirm the opinion that the degree of excess in consumption frequency is intimately related and in almost exact proportion to the degree of exposure to continuous and considerable inhalation of animal and mixed fiber dusts.

FURRIERS AND TAXIDERMISTS.

Fur dressing and dyeing are preliminary manipulations of the fur material for a large variety of subsequent industrial processes, of which the most important is the manufacture of felt hats. While the census of manufactures of 1905 returns the number of wage-earners employed in the dressing of fur at only 1,105,[a] the total is much larger when persons are included who manipulate fur as a preliminary process in hat manufacture, where the most important operations are pulling, blowing, and forming. All of these are employments exposing considerably and continuously to the inhalation of fine fur dust. The material used in felt hat manufacture is almost exclusively the fur of Belgian hares, which is imported for this purpose in enormous quantities. The preliminary process of fur pulling as carried on in Belgium and England is described in considerable detail by Rose E. Squire, one of His Majesty's inspectors of factories, whose observations and conclusions are of exceptional interest and value. Most of the fur pulling in Belgium is done by women, who

[a] Census of Manufactures, 1905, Part I, p. 232.

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worker in a downward direction by means of a properly constructed flue under the troughs and an extracting fan would seem to be practicable, and the down could be collected outside in a receptacle for the purpose."

The dressing and dyeing of aquatic furs has been described at length in a bulletin of the United States Fish Commission, in which the various processes are illustrated, with special reference to American conditions. It is evident that in most of the processes the risk of dust inhalation is a very considerable one, chiefly, of course, of fine particles of hair, wood, fur (properly so called), and animal down, which is usually a waste product. There is, in addition, a not inconsiderable risk of exposure to the inhalation of other health-injurious kinds of dust, of which arsenic is the most important metallic substance, combining poisonous qualities. From this descriptive account the following is extracted, as emphasizing the more important circumstances which give rise to the production of health-injurious dust and which, no doubt, can be materially modified by improved methods of dust removal at the point of origin:

"If the overhairs are to be removed, that process is next in order, except in the dressing of muskrat skins, when it is usually postponed until after the dressing. In preparing for plucking, the hair side is dried and warmed by artificial heat, the membrane being kept moist in the meantime. Each skin is placed flesh side down on a flat, hardwood beam, similar to that used in breaking except that it is covered with thick, elastic leather. Chalk is first sprinkled over the hair, and then, using a knife similar to that employed in breaking, a workman rubs or works most of the overhairs out of the membrane. Those not removed in this manner are subsequently plucked out with a dull knife of soft metal. With this knife in his right hand and his thumb protected with a rubber cot about 4 inches in length, the picker grasps the hairs between the edge of the knife and his protected thumb and with a quick, jerking motion pulls them out, going over the entire pelt in this manner. The fur seal is quite difficult to unhair, and the process is more complicated."

The process of fur manufacture in felt-hat making is, for the present purpose, the most important one. The number of men employed as fur blowers and cutters in the felt-hat industry is not known with accuracy, but it forms an important branch of the industry. The processes, in their relation to health-injurious circumstances, have been described in some detail in a special report of the Massachusetts state board of health on dangerous occupations, from which the following extract is made:

In the manufacture of derby and felt hats the essential material is fur, and that used for the best product is from cony and allied species. This comes to the factory clipped from the skin and treated

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with cyanide of mercury. The different kinds of fur are mixed together in large covered machines, in which the coarse hair is separated from the soft, downy fur, which latter is taken to the felt machine. This consists of a revolving copper cone, perforated with numerous small holes, through which the air is drawn by suction apparatus. The cone is inclosed in a barrel-like covering, open at the top, which has a door in the side for the removal of the felt as made. The fine hairs are blown into the upper part of the inclosure, and they are attracted toward the perforated cone by the air currents going thereto. They are then deposited in a thin layer on the outside of the cone, and when the deposit has gone on to a sufficient extent a cloth wrung out in hot water is applied, and the cone and its covering are removed and plunged into hot water for a short time, the heat and moisture causing the individual hairs to become more intimately matted; then the conical layer is pulled off and sent to the shrinking room.

The most recent English mortality statistics of furriers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General in part as follows:

The numbers comprised in this occupation are too limited to warrant more than general statements concerning them. Except at the age group 20 to 25 years, the death rates are considerably above the standard for all occupied and retired males, and at every age group their mortality very considerably exceeds that of tanners, being more than double as great at some stages of life. In the main working period their comparative mortality figure from all causes is 1,332, or 33 per cent above the standard, and no less than 72 per cent above the corresponding figure for tanners. The mortality from accident and from suicide is less than the standard for all occupied and retired males, and is also less than that for tanners, but from all other causes furriers suffer excessively, the mortality from cancer being three times as great, and that from influenza and phthisis, as well as from nervous and circulatory diseases, being about twice as great as that for tanners.(a)

The recent English statistics for furriers are quite conclusive of the more or less unfavorable effect of this industry on health. In the table which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the result is decidedly suggestive of conditions in this trade more or less unfavorable to life and health. The excess in the general death rate of furriers is met with at all ages. The excess in the death rate of furriers at ages 25 to 54 is between 2.29 and 2.69 per 1,000, increasing suddenly to astonishing proportions at ages 55 or over. While the excess at the age period 55 to 64, or 20.27 per 1,000, may be in part the result of comparatively small numbers, the comparison is, nevertheless, decidedly suggestive.

(a) Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxv.

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MORTALITY FROM ALL CAUSES AMONG FURRIERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for furriers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	3.72	+ 1.28	152
20 to 24 years	4.41	4.42	+ .01	100
25 to 34 years	6.01	8.52	+ 2.51	142
35 to 44 years	10.22	12.91	+ 2.69	126
45 to 54 years	17.73	20.02	+ 2.29	113
55 to 64 years	31.01	51.28	+20.27	165
65 years or over	88.39	107.84	+19.45	122

The preceding table is self-explanatory and requires no further comment. A more extended comparison, however, is made in the next table, in which the mortality of furriers from consumption is compared with the normal mortality of occupied males from this disease by divisional periods of life. The comparison shows that the mortality from consumption was excessive at all ages 20 or over, the excess being most marked at ages 35 to 44 and at ages 55 or over.

MORTALITY FROM CONSUMPTION AMONG FURRIERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for furriers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	.....	.....	.....
20 to 24 years	1.55	1.77	+ .22	114
25 to 34 years	2.03	3.46	+1.43	170
35 to 44 years	2.74	4.74	+2.00	173
45 to 54 years	3.04	3.86	+ .82	127
55 to 64 years	2.16	7.33	+5.17	339
65 years or over	1.11	5.88	+4.77	530

The recorded industrial insurance mortality statistics of furriers and taxidermists include 105 deaths from all causes, of which 34, or 32.4 per cent, were from consumption. Of the mortality of furriers from respiratory diseases other than consumption, 9 were from pneumonia, 5 from bronchitis, and 3 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases

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are combined, 48.6 per cent of the mortality of furriers was from diseases of the lungs and air passages. The excess in the consumption mortality of furriers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at 35 to 44, when out of every 100 deaths from all causes 63.3 were from consumption, against a normal expected proportion of 23.6. The numbers are too small for other periods of life to warrant entirely safe conclusions. The analysis of the consumption mortality of furriers in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **FURRIERS AND TAXIDERMISTS**, 1897, TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for furriers and taxidermists from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of furriers and taxidermists, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Furriers and taxidermists.	Males in registration area, 1900 to 1906.
15 to 24 years	3	1	33.3	27.8
25 to 34 years	18	7	38.9	31.3
35 to 44 years	30	19	63.3	23.6
45 to 54 years	13	4	30.8	15.0
55 to 64 years	24	2	8.3	8.1
65 years or over	17	1	5.9	2.7
Total	105	34	32.4	14.8

The preceding observations and statistical data regarding the mortality of furriers confirm the conclusion that the degree of consumption frequency in this employment is decidedly excessive and without question directly connected with the health-injurious circumstances of the trade. The excess in the degree of consumption frequency in England and Wales is most marked at advanced years, which would make it probable that the type of the disease assumes in many cases the fibroid form, or that of a distinct occupation disease.

HATTERS.

All who have written on the diseases of occupation have included felt hat manufacture among the trades specifically injurious to health and life. The conditions which give rise to a high death rate and the degree of disease frequency above the normal are primarily due to the

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continuous and considerable exposure to the inhalation of irritating dust, which is produced during nearly every important process of hat manufacture except the sizing, where steam and vapor, combined with high temperature, increase considerably the liability of the workmen to respiratory diseases. Mercurial poisoning is another serious risk of the industry, but limited to finishers and a few other departments, and, fortunately, less common at the present time than in former years. The felt hat making industry is concentrated in a few States, chiefly New Jersey, New York, and Connecticut. The industry, according to the census of manufactures of 1905, gave employment to 22,047 wage-earners, and of this number 15,432 were males 16 years of age or over.(a) In addition, however, the manufacture of wool hats gave employment to 1,503 wage-earners, and the manufacture of hat and cap materials to 2,414.

The concentration of the industry in New Jersey early attracted the attention of qualified medical observers, and as far back as 1860 Dr. J. A. Freeman, of Orange, prepared an address on Mercurial Diseases among Hatters for the New Jersey state medical society. In 1878 Dr. L. Dennis, of Newark, prepared a report on Hatting as Affecting the Health of Operatives, at the request of the state board of health, which was published that year in the annual report of the board. In 1886, by request of the same authority, Dr. J. W. Stickler, of Orange, prepared an extended account of the Hygiene of Hat Manufacture and the Diseases of Hatters, including the personal examination of a large number of workmen for evidences of physical impairment in consequence of the industry. The medical investigations were amplified during the years 1889 to 1895 by an elaborate inquiry through the state bureau of labor statistics into the effects of the occupation on the trade life of persons employed in the industry, as part of a general investigation, including many other dangerous and unhealthy employments. The various investigations all confirm the generally accepted view of qualified authorities, that the manufacture of felt hats is attended with more or less health-injurious circumstances, but that some departments of the industry are decidedly more exposed to this risk than others. While the investigations have never been entirely conclusive, in the absence of thoroughly trustworthy statistics of mortality for the more important employments, felt cutters, hat makers, and sizers are apparently the most liable to respiratory and pulmonary diseases and subject to a death rate above the average for persons generally employed in felt hat manufacture. Other employments decidedly injurious to health are pouncing, singeing, steaming, drying, hardening, and

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(a) Census of Manufactures, 1905, Part I, p. 252.

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mixing, in all of which considerable dust or other health-injurious circumstances increase the liability to respiratory and pulmonary diseases. Finishers, flangers, and curlers are important employments apparently less liable to these diseases, but the degree of difference is, in all probability, not great, since these occupations are often carried on under about the same conditions as other employments previously enumerated, the three occupations being frequently conducted in the same or in adjoining rooms. The improvements which have been introduced into the industry, including the inclosure of dust-producing machinery and the more effectual control of the dust generated during pouncing and finishing at the point of origin, has, no doubt, resulted in a marked improvement during very recent years. Many of the hat factories have been rebuilt and the conditions in the modern factories are decidedly better than in those constructed in former years.

The general vital statistics regarding hatters are very limited but fairly conclusive. According to the vital statistics of 1890 there were enumerated 14,222 hat and cap makers in the registration States of the United States, and of this number 356, or 2.5 per cent, had attained to the age of 65 years or over. The number of deaths from all causes in this group was 277, and of this number 94, or 33.9 per cent, were from consumption. The mortality from all causes for hatters was considerably higher in each age group than the corresponding average for this class of occupations, and at ages 25 to 44, inclusive, the death rate of hat and cap makers was 19.27 per 1,000, or more than twice the average rate in occupations of this class, which was returned as 9.18. The specific death rate from consumption was 6.61 per 1,000, and from respiratory diseases other than consumption, 2.95 per 1,000. The rates were high for all diseases except heart disease and suicide. The death rate from consumption was more than twice the average rate and extremely high in the cities of the registration States only, for which it was returned as 7.8 per 1,000.(a)

The vital statistics of the census of 1900 included the mortality occurring among 12,680 males of known ages 15 or over enumerated as being employed in this group of occupations. The number of deaths from all causes in this group was 228, and the corresponding death rate 18 per 1,000. The death rates per 1,000 of population, by divisional periods of life, were, at ages of 15 to 24, 5.40; at ages 25 to 44, 13.10; at ages 45 to 64 the rate was 32.96; and at ages 65 or over it was 173.8. The death rates of hat and cap makers were generally above the average for the manufacturing and mechanical industries class, being highest from consumption, heart disease,

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a Vital Statistics, Eleventh Census, Part I, p. 188.

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and pneumonia.[a] For reasons not stated in the census report, the details regarding the mortality in this occupation were less fully reported in connection with the census of 1900 than in connection with that of 1890.

For some years the vital statistics of the United Hatters of North America have been published in semiannual reports, and combining their returns for the period June 1, 1898, to November 30, 1901, there occurred 412 deaths from all causes, and of this number 133, or 32.3 per cent, were from consumption. The number of deaths from respiratory diseases other than consumption was 52, or 12.6 per cent. Combining the deaths from consumption and from other respiratory diseases, there were 185 deaths from diseases of the lungs and air passages, or 44.9 per cent of the mortality from all causes.

The most recent English mortality statistics of hatters are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part, as follows:

The mortality in this occupation shows an excess at every stage of life, the excess being most marked at ages 20 to 25 and 65 and upward. In the main working period the comparative mortality figure is 1,137, or above the standard for all occupied and retired males by 13 per cent. Hatters appear to be specially liable to phthisis, the mortality from that disease exceeding the normal by 50 per cent, and also to other diseases of the respiratory system and to Bright's disease, the mortality from which is above the average by 40 per cent. Suicide is also frequent. On the other hand, the mortality from influenza, nervous diseases, and accident is below the average.[b]

The recent English mortality statistics of hatters are entirely conclusive of the unfavorable effects of this industry on health. In the table which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the result is suggestive of conditions in this trade more or less unfavorable to life and health. The excess in the general death rate of hatters is met with at all ages, but the relative and actual excess is most pronounced at ages 45 or over. In this respect the mortality of hatters quite closely resembles the corresponding mortality of furriers and taxidermists.

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[a] Vital Statistics, Twelfth Census, Part I, p. cclxxxiv.

[b] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxii.

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MORTALITY FROM ALL CAUSES AMONG HATTERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for hatters.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.90	+ 0.46	119
20 to 24 years	4.41	6.19	+ 1.78	140
25 to 34 years	6.01	6.70	+ .69	111
35 to 44 years	10.22	11.44	+ 1.22	112
45 to 54 years	17.73	19.82	+ 2.09	112
55 to 64 years	31.01	35.97	+ 4.96	116
65 years or over	88.39	103.42	+15.03	117

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of hatters from consumption and other respiratory diseases is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that the mortality from consumption is excessive at all ages, but the excess is most marked at ages 20 to 54. The table further shows that the mortality of hatters from other respiratory diseases is above the average for occupied males generally at ages 45 or over, by from 1.60 to 6.10 per 1,000. The two tables derived from English sources fully confirm the previous conclusion that the mortality of hatters is excessive when proper comparison is made with the corresponding mortality of occupied males generally, and that this excess is largely because of the high degree of consumption frequency at ages 20 to 54. The table which follows requires no further comment and is otherwise self-explanatory:

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG HATTERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for hatters.			Death rate per 1,000 for all occupied males.	Death rate for hatters.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.61	+0.07	113	0.24	.....	.....	.....
20 to 24 years	1.55	3.47	+1.92	224	.48	0.30	−0.18	63
25 to 34 years	2.03	3.70	+1.67	182	.77	.77	.....	100
35 to 44 years	2.74	4.11	+1.37	150	1.66	1.33	− .33	80
45 to 54 years	3.04	4.76	+1.72	157	3.32	4.92	+1.60	148
55 to 64 years	2.16	2.17	+ .01	100	6.54	10.85	+4.31	166
65 years or over	1.11	.....	.....	.....	17.77	23.87	+6.10	134

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The recorded industrial insurance mortality statistics of hatters include 832 deaths from all causes, of which 278, or 33.4 per cent, were deaths from consumption. Of the mortality of hatters from respiratory diseases other than consumption, 71 were from pneumonia, 4 from asthma, 12 from bronchitis, and 10 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 45.1 per cent of the mortality of hatters was from diseases of the lungs and air passages. The excess in the consumption mortality of hatters is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 55.4 were from consumption, against a normal expected proportion of 31.3. Very few deaths from consumption occurred among hatters at ages 65 or over, but the proportionate mortality was exceptionally high at young ages, having been 53.8 per cent at ages 15 to 24. The analysis of the consumption mortality of hatters in detail is set forth in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG HATTERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for hatters from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of hatters, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Hatters.	Males in registration area, 1900 to 1906.
15 to 24 years	78	42	53.8	27.8
25 to 34 years	175	97	55.4	31.3
35 to 44 years	185	84	45.4	23.6
45 to 54 years	127	34	26.7	15.0
55 to 64 years	135	20	14.8	8.1
65 years or over	132	1	.8	2.7
Total	832	278	33.4	14.8

The preceding observations and statistical data confirm the conclusion that hatters as a class are subject to an excessive mortality from consumption, but in particular at ages 15 to 64, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

SILK MANUFACTURE.

Silk manufacture in the United States is a highly diversified industry, giving employment in 1905 to some 79,601 wage-earners, in 624 manufacturing establishments. Of the number employed 27,037

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were adult males, or 34 per cent.(a) A large number of women, and children under 16 years of age, are employed in this industry, which offers exceptional opportunities for light and fairly remunerative employment particularly adapted to women and children. While the number of persons employed in the industry has materially increased within recent years, the principal increase has been chiefly in the number of women wage-earners, or to be specific, from about 35,000 in 1900 to a little over 45,000 in 1905. The actual extent of the silk industry, however, is greater than indicated by these statistics, since the manufacture of silk hosiery and silk knit goods is included in the hosiery and knitting industries generally. By products, the industry divides itself into the manufacture of broad silks of many varieties, ribbons, velvets, plushes, tapestry and upholstery goods, machine twists, floss, etc. How far the conditions affecting health vary in the different branches of the industry has not yet been determined with the required accuracy to warrant entirely safe conclusions.

The most important processes in silk manufacture are winding, reeling, spinning, throwing or twisting, warping, weaving, picking, cleansing, and dyeing. On account of the very large variety of goods manufactured and the admixture, according to requirements, of the silk with other textile materials, chiefly cotton and wool, the degree of dust exposure in the different employments varies considerably, so much so that no definite rule can be laid down which would clearly differentiate the health-injurious processes from those which are comparatively innocuous. The hygiene of employment in silk mills was carefully considered by Arlidge, whose opinion was decidedly in favor of silk manufacture as compared with the corresponding conditions affecting health in the manufacture of cotton, linen, or wool. In his opinion the silk industry stands lowest in the list of textile manufactures as a dust-producing and a health-destroying occupation, and is, apart from the general insanitary features surrounding all textile operations, practically devoid of evils originating in the quality of the material and its manipulation, excepting in one department, and that is where waste silk is worked or manipulated for subsequent manufacturing purposes. The processes of winding, twisting, reeling, and spinning, in the opinion of Arlidge, are accompanied by little or no dust where the best silk is in use, and he regards all of these as harmless to health. Since these observations were made a matter of record, however, it is necessary to keep in mind that the admixture of other textile fibers in the manufacture of mixed goods has very considerably increased—so much so that nearly 10,000,000 pounds of yarn other than silk were used by silk mills, according to the census of manufactures of 1905.

(a) Census of Manufactures, 1905, Part III, p. 161.

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Regarding the manufacture of silk waste, Arlidge states that this material is derived either from mills where the best silk is employed, of which it represents, in a certain sense, the refuse; or else from a certain grade of cocoons received from abroad and differing widely in quality. Many of these are so mixed with dirt as to offer, to the uninstructed eye, no semblance of being silk at all, and it is these impure cocoons that give rise, in the preparatory stages of manufacture, to foul smells and dust. Arlidge refers to a report by Redgrave in 1872, to the effect that, "The dressing of waste silk is one of the most nauseous of occupations," which, however, may be rendered comparatively inoffensive and harmless by proper ventilating appliances.

The preparatory processes after the boiling of the cocoon are, according to Arlidge, conducted in what are called the dressing rooms, and it is almost exclusively in these rooms that dust is encountered While many carding machines are inclosed and only give rise to dust at intervals when opened for any purpose, there are horizontally acting machines not admitting of inclosure by their present construction, which do throw off fine dust traceable on surrounding objects and perceptible as a haze in the atmosphere around. In addition to the dressing process, so-called gassing is decidedly injurious to health, since the burned minute particles of silk float in the air, producing the smell of combustion of animal matter to a perceptible degree and likewise a dust visible as a thin haze. The temperature in these rooms is, as a rule, excessive, while the atmosphere is grossly polluted unless artificial ventilation is provided. These observations of Arlidge are in marked contrast to the earlier conclusions of Doctor Greenhow, who conducted an inquiry into the mortality of towns in which the silk industry was concentrated during the early sixties. The mortality from consumption in these towns at that time was extremely high, but during the intervening period vast improvements have taken place and the mortality from consumption has been reduced to the normal of English towns generally. No really qualified investigation, however, has been made into the actual conditions affecting the health of workers in silk mills at the present time, and even Arlidge is forced to the conclusion that—

A certain amount of asthmatic breathing and bronchitis is, after long employment, set up by the dust of the dressing department and by that of gassing. And judging from the experience of the Macclesfield Infirmary, a considerable number of silk workers break down as age advances with symptoms of fibroid phthisis. Unfortunately there appears to have been no medical research into the pathology of such cases, and no statistical record kept. Further, the high temperature existing in certain workrooms can not be without effect on health. Indeed, the aspect of many of the women, their anæmia and other signs, betray the ills attending their calling.

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The very favorable conclusions of Arlidge are also in contrast to the conclusions of Dr. Pierre Givre, who in 1890 published a treatise on tuberculosis among silk workers, chiefly in the silk district of Lyon. According to these researches, among a very considerable number of deaths of silk workers during a long period of years, including both sexes, the mortality from tuberculosis had equaled 35.6 per cent of the mortality from all causes. On contrasting the male with the female workers, the latter exhibited a decidedly higher proportion, while at the same time the deaths occurred at an earlier age. Doctor Givre's opinion was particularly unfavorable to the employments of winders and carders, compared with other branches of the industry. Additional statistical evidence regarding the hygiene of silk manufacture is referred to by Arlidge, who obtained from Dr. Henry Fernie, of Macclesfield, the statistics of 922 persons engaged in the silk trade treated as out-patients at the infirmary. Among this number 25 per cent were cases of either tubercular or respiratory diseases.

For a really conclusive opinion more data are required than thus far have been brought together, with special reference to essential differences in methods of manufacture according to the kind of goods manufactured. As previously stated, the industry lends itself peculiarly to the employment of women and children, and an examination of the age distribution proves that there are comparatively few persons of advanced ages employed in silk manufacture. The age distribution of 49,422 silk workers, 15 years of age or over, with distinction of sex, was as follows:

NUMBER AND PER CENT OF MALE AND OF FEMALE SILK WORKERS IN EACH AGE GROUP, 1900.

[From report of the Bureau of the Census on Occupations, 1900.]

Age.	Male silk workers.		Female silk workers.	
	Number.	Per cent.	Number.	Per cent.
15 to 24 years	9,022	44.4	21,884	75.1
25 to 34 years	5,301	26.1	5,082	17.5
35 to 44 years	3,380	16.7	1,519	5.2
45 to 54 years	1,563	7.7	461	1.6
55 to 64 years	785	3.9	127	.4
65 years or over	250	1.2	48	.2
Total	20,301	100.0	29,121	100.0

The table emphasizes the concentration of employments in silk manufacture at the younger ages and the comparative infrequency of employment at ages over 45. Whether the comparatively small number of persons employed in old age is the result of heavy mortality following the early years of employment, or whether it is because of labor requirements more favorable to the employment of

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young persons, can not be determined at the present time. The table, however, is decidedly suggestive and it probably has some connection with the higher mortality of silk workers than is normal to the general population, although a large number, no doubt, after suffering a temporary impairment, leave the industry for other employments, and they are thus lost sight of in the vital statistics of the trade.

While no conclusive investigation has been made to determine the health conditions in the different branches of the industry, it is probably quite safe to assume that employment in plush and velvet mills is a more dusty occupation than that in mills manufacturing sewing silk or the usual grade of ribbons and broad goods. In the plush mills, employment in the finishing rooms exposes to a considerable amount of dust. Also, in the shearing rooms there is considerable dust, which, however, is reduced by the required humidity of the atmosphere. In the brushing rooms there is considerable dust, and there is probably even more dust at the pegging and so-called tagging machines, which are difficult of exact description. Thus far no thorough investigation has been made, either in this country or abroad, which would warrant final conclusions as to whether the decidedly favorable opinion of Arlidge is warranted by present-day conditions, but as far as it is possible to judge the mortality of silk-mill workers and their liability to tubercular and respiratory diseases is somewhat below the average for persons employed in cotton and woolen mills. The most recent English mortality statistics of silk manufacture are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part, as follows:

The mortality of these workers is below the standard for occupied and retired males at all ages up to the fifty-fifth year, the defect being especially noticeable at the age group 25–35 years. Above the age of 55 years the rates exceed the standard. The comparative mortality figure in the main working period of life is 964, or 4 per cent below the average. These workers are liable to less than one-third of the standard mortality from accident, to one-half of that from influenza, and to two-thirds of that from respiratory diseases, and their mortality from alcoholism and liver disease, as well as from cancer, is also low. On the other hand, they show excessive mortality from phthisis, nervous diseases, Bright's disease, and suicide, especially from the two causes last mentioned.(a)

The recent English mortality statistics for silk workers are quite conclusive of the more or less unfavorable effects of this industry on health as regards the more advanced periods of life. In the table which follows a comparison is made of the mortality from all causes of men in this group with occupied males generally, and the comparison shows that the death rates of silk workers were below the av-

[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxxxvii.

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erage at ages 15 to 44, slightly above the average at ages 45 to 54, and decidedly so at 55 years or over, when the excess in the death rate was 5 per 1,000 at ages 55 to 64 and 19.16 at 65 or over.

MORTALITY FROM ALL CAUSES AMONG MALE **SILK WORKERS** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement of the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for male silk workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.30	− 0.14	94
20 to 24 years	4.41	3.27	− 1.14	74
25 to 34 years	6.01	4.12	− 1.89	69
35 to 44 years	10.22	8.56	−1.66	84
45 to 54 years	17.73	17.90	+ .17	101
55 to 64 years	31.01	36.01	+ 5.00	116
65 years or over	88.39	107.55	+19.16	122

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of silk workers from consumption is compared with the normal mortality of occupied males from this disease, by divisional periods of life. The comparison shows that the mortality from consumption is excessive at ages 20 to 34, inclusive, and at ages 45 or over. The exceptions are of minor importance, but the comparison suggests a degree of consumption frequency materially above the average, or by from 0.27 to 1.53 per 1,000. The table which follows requires no further comment:

MORTALITY FROM CONSUMPTION AMONG MALE **SILK WORKERS** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate for male silk workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.23	−0.31	43
20 to 24 years	1.55	1.82	+ .27	117
25 to 34 years	2.03	2.40	+ .37	118
35 to 44 years	2.74	2.05	− .69	75
45 to 54 years	3.04	3.95	+ .91	130
55 to 64 years	2.16	3.69	+1.53	171
65 years or over	1.11	2.00	+ .89	180

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The recorded industrial insurance mortality statistics of silk workers include 295 deaths from all causes, of which 106, or 35.9 per cent, were from consumption. Of the mortality of silk workers from respiratory diseases other than consumption 21 were from pneumonia, 5 from asthma and bronchitis, and 7 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 47.1 per cent of the mortality of silk workers was from diseases of the lungs and air passages. The excess in the consumption mortality of silk workers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 35 to 44, when out of every 100 deaths from all causes 60 were from consumption, against a normal expected proportion of 23.6. The analysis of the consumption mortality of silk-mill workers in detail is set forth in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG SILK WORKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for silk workers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of silk workers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Silk workers.	Males in registration area, 1900 to 1906.
15 to 24 years	82	28	34.1	27.8
25 to 34 years	61	32	52.5	31.3
35 to 44 years	55	33	60.0	23.6
45 to 54 years	31	7	22.6	15.0
55 to 64 years	37	4	10.8	8.1
65 years or over	29	2	6.9	2.7
Total	295	106	35.9	14.8

The preceding observations and statistical data confirm the conclusion that silk workers as a class are subject to an excessive mortality from consumption, but in particular at ages 15 to 44, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

WOOLEN AND WORSTED MANUFACTURE.

The manufacture of woolen and worsted goods has, during recent years, developed into an American industry of very considerable proportions, and in 1905 gave employment to 143,458 wage-earners. Of

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this number 75,717 were males, 56,749 females, and 10,992 children and young persons under 16 years of age. While an exact division of the industry into woolen and worsted manufacture is somewhat difficult, in approximate numbers there were 72,747 employed in the manufacture of woolen goods, 69,251 in the manufacture of worsted goods, in addition to which there were enumerated 681 wool pullers and 779 wool scourers.(a) The importance of the woolen industry is gradually declining, while the manufacture of worsted goods is taking its place. Although the processes of manufacture are very much the same as in cotton textiles generally, the worsted industry is a very much more technical process, including some fifty well-defined subdivisions of labor. The most important of these are sorting, scouring, carding, combing, spinning, weaving, dyeing, and finishing. In nearly all of these processes the exposure to animal fiber dust is quite considerable, being somewhat greater in the manufacture of woolen than of worsted goods. The processes of scouring, dyeing, and fulling are comparatively free from dust, but steam, vapor, and dampness increase the disease liability of the workmen in these employments.

Wool sorting is quite a dusty employment, but the risk of so-called "wool-sorter's disease" is limited to the handling of certain grades of foreign wool, chiefly van-mohair, alpaca, East Indian cashmere, and camel's hair, all of which are imported from the Far East. Since these wools are usually imported by way of England they are there, under factory regulations, subjected to a disinfecting process, by which the risk of anthrax is reduced to a minimum. In no branch of the woolen industry is artificial ventilation and dust removal of greater importance than in wool and rag sorting, which, in common with the general risk of dust injury, has the additional risk of transmission of infectious diseases, chiefly anthrax and smallpox. An effective device for removing the dust in wool sorting has been described by Haldane in his lecture on the removal of dust and fumes of factories before the Royal Society of Arts.

The woolen and worsted industries are of such great complexity that only a few of the more important occupations can be considered at this time. Thackrah, in his comments upon the diseases peculiar to persons employed in the manufacture of woolen and worsted goods, observes:

Wool combers work in apartments which, from the fire employed to heat the combs, are kept at the temperature of about 80°. The fires are made of charcoal. From the evolution of carbonic-acid gas, when the windows are not sufficiently open, the men are occasionally affected with headache. In some of the manufactories an attempt

(a) Census of Manufactures, 1905, Part III, p. 128.

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has been made to heat the combs by means of steam, but the workmen complain that by this mode the rooms are made hotter and the combs colder; in other words that the increase of temperature is more diffused. A light dust arises from the wool, or rather perhaps from the soap retained by the wool after washing. It annoys the air tube and obliges some persons to leave the employ. The men, however, whom we found in the rooms appeared quite healthy, and we were informed that out of 100 individuals only 2 or 3 were absent from illness. * * * The heat of the apartments does not appear to shorten life. We have repeatedly seen at work men from 60 to 70 years of age.

The same authority says with reference to worsted spinners that—

Spinners of worsted, chiefly young persons, are exposed to considerable heat in rooms traversed by steam pipes and often deficient in ventilation. The thermometer, in November, we have found in the spinning rooms at 65° and 70°, and in the warping rooms, where steam pipes are not introduced, 58°, while in the open air it was 48°. In summer, of course, the temperature, particularly of the spinning rooms, is considerably higher. The rooms in most mills, though spacious, are too low. The windows are about the middle of the walls and no apertures are made above them for the admission of air. The labor is light and the posture varied. * * * The operatives have generally the appearance of health. Many, however, particularly at the commencement of the employ, suffer from headache and sickness, the result, I conceive, of the want of ventilation rather than the temperature of the rooms. Some can not bear the employ. The mills are generally in the country or at the outskirts of the town.

At the time, however, when Thackrah reported his observations the worsted industry had developed to only very small proportions, chiefly the manufacture of worsted handkerchiefs, fancy goods, and worsted stockings. The weavers employed in the manufacture of these goods were, in the opinion of Thackrah, subjected to some dust, which affected the respiration and rendered the employment less healthful than the corresponding occupation in cotton manufacture. This opinion has not been sustained by subsequent investigation, which would appear to prove conclusively that the manufacture of woolen and worsted goods is less injurious than employments in the manufacture of cotton goods.

During recent years the conditions of labor in the woolen and worsted industries have undergone a material improvement, largely as the result of the concentration of the industry in the elimination of many small factories not built in conformity to modern sanitary requirements as to air space, light, and ventilation. While important improvements have been made, it is still rare, however, to find an effective system of artificial dust removal, chiefly in the processes generating the largest quantities of dust—that is, the carding and combing branches of the industry. The amount of fly resulting from the various operations is considerable in both woolen and worsted manufacture and continuous cleaning is necessary, and this is practi-

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cally all done by means of the ordinary sweeping process, much of which results in dust disturbance rather than in dust removal.

The woolen and worsted industries were very carefully considered by Arlidge in his treatise on the diseases of occupation. He calls attention to the fact that most of the health-injurious processes are those which have to do with the preparatory stages, and he describes these processes in their relation to health, in part, as follows:

In the first place, the bales have to be opened, and their contents being heaped upon large tables have to be sorted in order to separate their different qualities. Along with more or less dirt removed with the fleeces, the wool holds a considerable quantity of greasy matter. From this last it has to be freed by careful and repeated washings in alkaline fluids and by specially constructed machines. It has, in the next place, to be subjected to "willying" (winnowing), "scribbling," and "carding machines" to remove every portion of dirt and to deliver it, as in the cotton manufacture, in the form of a "sliver" of fine fibers collected in a loose rope-like form. In the preliminary combing processes considerable dust is thrown off, but by the use of inclosed machines and of fans to withdraw it as fast as it is generated little escapes into the apartment to annoy or to injure. We owe it to the ingenuity of modern engineers that these preliminary operations have well-nigh ceased to be unhealthy.

Arlidge, as the result of his investigations, held that the dust from wool was more innocuous than that of cotton, and very much more so than the dust of flax, because of the inherent structure of the wool fiber and the fact that its animal origin makes it less irritating and less foreign to living animal tissue. Moreover, he held that when the woolen fibers reached the spinning frames they had to be lubricated with oil, which materially reduced the amount of dust generated during the subsequent manipulation. This conclusion, however, is subject to material modification in many mills, where the evidence of a considerable amount of dust being generated during the spinning process is readily observed by the amount of dust under and on the machinery and present in the atmosphere.

With special reference to worsted spinning and weaving, Arlidge observed that—

Other advantages attending the worsted spinning are that it is done dry and does not need the same degree of moist heat required in the other textile trades. Further, in the weaving of worsted a far lower and less humid temperature is called for than in the case of cotton weaving; while, what is of still greater moment, clay sizing and its emitted dust have no place.

Arlidge sums up his general conclusions regarding the health of persons employed in the woolen and worsted industry as follows:

The general conclusion respecting the worsted manufacture is that it is a healthy occupation. The artisans look less anæmic and sallow than cotton operatives, while their social and domestic positior

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appears more favorable. They likewise suffer less with respiratory diseases and consumption; but the proportion in which these prevail is in some degree regulated by the quality of wool used, that from Australia and the Cape being more dusty than English and therefore more provocative of bronchial irritation. Doctor Greenhow could not find that chest diseases and the mortality therefrom occurred in a higher ratio among the woolen workers of Bradford than with the general population.

Other writers on occupation diseases have given equally extended consideration to the industry, but, on the whole, the conclusions coincide with those of Arlidge, that employment in woolen and worsted manufacture, with the resulting exposure to animal fiber dust, is less dangerous to health than the corresponding employment in the manufacture of cotton and other vegetable fiber textiles.

Dr. B. W. Richardson held that the dust or fly of wool appeared to produce no really deleterious effects on the lungs, and that, in fact, the mortality of the workers in wool seemed to warrant the opinion that they were favorably exempted from disease, probably because the soft, oily dust of the wool protected the bronchial surfaces from irritation rather than that it irritated them. Tatham, writing with a better knowledge of the mortality statistics of the trade, confirms this opinion in his discussion of dust-producing occupations in Oliver's Dangerous Trades, from which the following is quoted:

Wool workers suffer much less severely from their occupation than do cotton operatives. In the weaving of woolen materials a lower and drier temperature is required than in the case of cotton weaving, and the mischief caused by "sizing" with china clay and other irritants has no place in woolen manufacture. Nevertheless, in certain of the processes, especially where inferior foreign wools are manufactured, a good deal of dust is disengaged, and this produces its ill effect on the lungs of the workers. It is also in connection with dirty or blood-stained foreign wools that the majority of cases of anthrax or wool sorters' disease have been observed from time to time which have been the subject of inquiry in past years by the medical department of the local government board.

It is worthy of notice that wool sorters are even more careless as regards exposure to cold and drafts than are even cotton workers, and their mortality from rheumatic fever is much higher, being double that experienced by agriculturists as a class. Wool workers have a comparative mortality figure from all causes which is somewhat above the average for occupied males generally, but is below that of other textile trades. Workers in wool appear to be remarkably free from intemperance, their mortality figure being less than one-fourth of the average. From diseases of the digestive system other than the liver wool workers die half as fast again as do occupied males generally, while from diseases of the nervous, respiratory, and urinary systems, as well as from cancer, the mortality of these workers is from 10 to 22 per cent in excess of that standard.

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The Rhode Island occupation mortality statistics return specifically only wool sorters. During the ten years 1897 to 1906 there were 37 deaths from all causes recorded in Rhode Island under the title of wool sorter. Of this number 5, or 13.5 per cent, were from consumption, and 5, or 13.5 per cent, were from respiratory diseases other than consumption. The combined mortality from diseases of the lungs and air passages was 10, or 27 per cent, against 30.3 per cent expected on the basis of the mortality of all occupied males in Rhode Island. The numbers are too small to warrant a final conclusion, but the facts are presented to make the analysis complete.

The most recent English mortality statistics of woolen and worsted manufacture are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part, as follows:

> The mortality among these operatives exceeds the standard for occupied and retired males at ages 20 to 25, and over 55 years, but is below that standard at other ages. In the main working period of life the comparative mortality figure for wool workers is 984, or less than the standard figure by only 2 per cent. The mortality from alcoholism and liver disease is less than three-fourths and that from accident is less than half the standard. The mortality from cancer, phthisis, respiratory diseases, and suicide is also in each case below the average. On the other hand, the mortality from nervous and circulatory diseases slightly exceeds, and that from diabetes mellitus and from Bright's disease considerably exceeds the standard.(a)

The recent English mortality statistics for persons engaged in woolen and worsted manufacture are fairly conclusive of the somewhat unfavorable effects of this industry on health, and decidedly so as regards the more advanced periods of life. In the table which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the result is suggestive of conditions in this trade more or less unfavorable to life and health. An excess in the general death rate of woolen and worsted workers is met with at ages 20 to 24, but at all other ages below 55 the mortality is below the normal, while at ages 55 to 64 the excess in the general death rate of woolen and worsted workers is 6.09 per 1,000, and at ages 65 or over it is 40.53 per 1,000.

(a) Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxxxvii.

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MORTALITY FROM ALL CAUSES AMONG MALE **WOOLEN AND WORSTED WORKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000, for all occupied males.	Death rate for male woolen and worsted workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.19	− 0.25	90
20 to 24 years	4.41	5.03	+ .62	114
25 to 34 years	6.01	5.18	− .83	86
35 to 44 years	10.22	8.90	− 1.32	87
45 to 54 years	17.73	17.14	− .59	97
55 to 64 years	31.01	37.10	+ 6.09	120
65 years or over	88.39	128.92	+40.53	146

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of woolen and worsted workers from consumption and other respiratory diseases is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that the mortality from consumption was excessive at ages 15 to 24 and at 55 years or over. The table further shows that the mortality from other respiratory diseases was excessive at ages 15 to 19 and at 65 years or over. The two tables, derived from English experience, would seem to warrant the conclusion that the woolen and worsted industry as such is not decidedly injurious to health. The data, however, are subject to a word of caution, in that the woolen and worsted industry includes many employments which permit of a comparatively easy transfer to other industries and occupations, so it is quite possible that a fair proportion of those impaired because of continuous exposure to animal and fiber dust, leave the employment and seek more congenial and healthful occupations in other branches of industry. This view is in part susceptible of statistical proof by the comparative mortality data of occupied and of occupied and retired males in the woolen industry of England and Wales, which for the first time were tabulated for the three years ending with 1902. The excess in the death rate of occupied and retired males employed in this industry over the occupied only was very slight at ages under 35, but 0.32 per 1,000 at ages 35 to 44, 0.86 at 45 to 54, 3.83 at 55 to 64, and 18.19 at 65 years or over.

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MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **WOOLEN AND WORSTED WORKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for woolen and worsted workers.			Death rate per 1,000 for all occupied males.	Death rate for woolen and worsted workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.54	0.69	+0.15	128	0.24	0.31	+0.07	129
20 to 24 years.....	1.55	2.38	+ .83	154	.48	.23	− .25	48
25 to 34 years.....	2.03	1.81	− .22	89	.77	.75	− .02	97
35 to 44 years.....	2.74	2.25	− .49	82	1.66	1.45	− .21	87
45 to 54 years.....	3.04	2.84	− .20	93	3.32	3.08	− .24	93
55 to 64 years.....	2.16	2.27	+ .11	105	6.54	6.46	− .08	99
65 years or over..	1.11	1.86	+ .75	168	17.77	25.44	+7.67	143

The recorded industrial insurance mortality statistics of woolen and worsted mill workers include 106 deaths, of which 26, or 24.5 per cent, were from consumption. Of the mortality of woolen-mill workers from respiratory diseases other than consumption, 8 were from pneumonia, 7 from asthma and bronchitis, and 2 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, it is found that 40.5 per cent of the mortality of woolen-mill workers was from diseases of the lungs and air passages. The excess in the consumption mortality of woolen-mill workers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 43.8 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of woolen-mill workers in detail is set forth in the following table:

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PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **WOOLEN AND WORSTED WORKERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for woolen and worsted workers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of woolen and worsted workers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Woolen and worsted workers.	Males in registration area, 1900 to 1906.
15 to 24 years	20	7	35.0	27.8
25 to 34 years	16	7	43.8	31.3
35 to 44 years	14	5	35.7	23.6
45 to 54 years	19	4	21.1	15.0
55 to 64 years	24	3	12.5	8.1
65 years or over	13	.....	.....	2.7
Total	106	26	24.5	14.8

The preceding observations and statistical data confirm the conclusion that woolen and worsted workers in the United States as a class are subject to a high mortality from consumption, but in particular at ages 15 to 44, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

CARPET AND RUG MANUFACTURE.

Carpet and rug manufacture may properly be considered a branch of the woolen and worsted industry, but it is only the weaving and finishing processes which require special consideration. The grade of yarn used probably has some bearing upon the quantity of dust generated during the process of manufacture, but it is in the so-called shearing and brushing that atmospheric pollution occurs in excess of similar conditions in woolen and worsted mills. The report of the Massachusetts state board of health on dangerous trades contains a brief reference to the sanitary aspects of the industry, from which the following is quoted:

The operation of carpet weaving is accompanied by much dust, and requires constant attention and keen watching for flaws and "skips" in the weaving. After a carpet or rug is woven it is inspected, sheared, and brushed. The shearing machines cut off all bits of fiber and other irregularities, and in so doing create considerable dust, much of which is coarse and heavy and does not long remain suspended in the air.

Five carpet factories visited employ about 6,000 persons, about 10 per cent of whom are between the ages of 14 and 16. The largest of these shows some departments in which poor light, excessive heat, moisture, and dust constitute the objectionable conditions. One large,

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fairly well lighted room, 220 by 120 by 16 feet, and occupied by 33 persons, has so much fine cotton dust and fiber in the air that it is with difficulty one can see across it. This dust is very irritating to the nose and throat.

Some of the rooms are poorly lighted, some are overheated, and some are badly ventilated; and one large basement room, 285 by 60 by 13 feet, occupied by 150 women and girls winding yarns on bobbins, combines all three of these objectionable conditions.

The wool-picking room is well lighted, but the air is heavy with wool fiber, and is at the same time excessively hot. One large dusting machine is equipped with a fan and exhaust dust pipe which never have been used; indeed, there is no shafting to run the fan. The machine has been in use upward of five years, and the person who operates it has worn a handkerchief over nose and mouth ever since it was started. The work is exceedingly dusty and dirty.

The weaving rooms of the next largest of the five factories are large and well lighted, but the air contains a noticeable amount of dust. Most of the departments of this mill show commendable conditions.

In the third, many of the children between 14 and 16 are very small and poorly developed for their age, and are far too poorly developed to be allowed to work ten hours and twenty minutes for five days in the week. In many rooms the windows are too far apart, and the light is barely sufficient even in good clear weather. The older weavers complain of failing eyesight, due to working with poor light.

One of the mills of this establishment, although comparatively new, is poorly lighted in the picking, carding, winding, drawing, and roving rooms, but otherwise the conditions are good. In four of the weave rooms the ventilation is very inadequate, the light is poor, and the air is very dusty.

The fourth establishment in order is, in the main, poorly lighted and inadequately ventilated, and the weave rooms are very dusty. In four rooms in which yarns are dressed the steam boxes are so loosely constructed that much steam escapes and causes extreme heat and moisture. About one-tenth of the employees in this establishment look sickly.

The smallest factory of all, one which employs ordinarily 500 persons, has good light, adequate ventilation, and commendable weave rooms. The employees appear to be in good health.

The hygiene of carpet manufacture has not attracted much attention, probably because of the fact that most of the processes are practically identical with the corresponding processes in woolen and worsted manufacture. The occupation classification in the carpet industry, however, includes a number of employments peculiar to the trade, of which mention may be made of art-square weavers, cutters of chenille cloth, fringe knotters, jute binders, plush weavers, shearers, steamers, willowers, and wire sharpeners. Of these occupations, employment at the willowing machines is probably the most dusty, since it is here that the wool fibers are torn apart and the dust and dirt

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removed. It is also probable that conditions in carpet-weaving rooms are less favorable on account of the coarser grade of yarn used and the material differences in loom construction. The weaving process itself is also quite different from the corresponding process of weaving in woolen and cotton textiles, and as far as it is possible to judge, the amount of dust generated during the weaving processes is greater in carpet and rug mills than in the corresponding processes of other branches of the textile industry. No qualified investigation, however, has been made which would warrant a final conclusion, nor has it been determined whether the amount of dust in the manufacture varies according to the varieties of carpets made, of which the most important are Wilton, Axminster, Kidderminster or ingrain, tapestry Brussels, and Venetian. The manufacture of matting is a separate industry, with exposure to vegetable fiber and mineral dusts, while in the manufacture of door mats the principal exposure is to mixed fiber dust. Arlidge sums up his conclusions regarding the hygiene of carpet making, briefly, as follows:

The wool used for carpet making is of coarse and short fiber; it is formed into a yarn, which is next wound on bobbins by child labor in readiness for the weavers' looms. Hand-loom weaving has been, for the most part, supplanted by the power loom, with the advantage of materially lessening the labor of the weavers. The manufacture of carpets is attended with considerable dust of a mixed character of wool and hemp, but no data are within reach to furnish information as to the extent in which it operates as a cause of disease.

The mortality of males employed in carpet manufacture was reported upon in the Supplement to the Fifty-fifth Annual Report of the Registrar-General of England and Wales. The number of men employed was comparatively small, having been only 8,532 at ages 15 or over, hardly warranting definite conclusions in view of the short period of three years for which the mortality data were returned. In general terms it was held that the death rates of carpet makers at the various age groups compared favorably not only with those of other textile workers but also with those of other occupied males. The comparative mortality was 873, which is 8 per cent below the standard. Among the causes of death of numerical importance consumption was 22 per cent in excess of the normal, and diseases of the respiratory system other than consumption were 11 per cent in excess. The mortality of carpet makers from diseases of the nervous, circulatory, digestive, and urinary systems appears to be below the average.

One fact which requires to be taken into consideration, however, is that in carpet weaving considerable physical strength is required, which accounts for the comparatively small proportion of women weavers. This, at least, is true of the weaving of Brussels carpet and probably applies to other grades. It is the opinion of those who are thoroughly familiar with the industry that men of excep-

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tional physique are required, and naturally among such a class the death rate should be low unless very abnormally increased by special causes. The most recent English mortality statistics of carpet and rug manufacture are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General in part as follows:

Here again the workers are too few in number to justify more than general examination. It appears that the mortality in this industry is below the standard for occupied and retired males at ages 25–45 years, but above it at all other ages. In the main working time of life the comparative mortality figure is 1,044, or 4 per cent above the standard. These workers show a fatality in excess of the average from cancer and from diseases of the nervous and circulatory systems, but in defect of the average from influenza, alcoholism, and liver disease, as well as from accident and suicide.(a)

The recent English mortality statistics of carpet and rug makers are quite conclusive of the more or less unfavorable effect of this industry on health. In the table which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the result is decidedly suggestive of conditions in this trade more or less unfavorable to health and life, but in particular at very advanced ages, when at 65 years or over the excess in the death rate of carpet and rug makers was 28.38 per 1,000.

MORTALITY FROM ALL CAUSES AMONG MALE CARPET AND RUG MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate of male carpet and rug workers.		
		Rate per 1,000.	Greater (+) or less (—) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.89	+ 0.45	118
20 to 24 years	4.41	5.19	+ .78	118
25 to 34 years	6.01	5.86	— .15	98
35 to 44 years	10.22	9.43	— .79	92
45 to 54 years	17.73	18.30	+ .57	103
55 to 64 years	31.01	33.94	+ 2.93	109
65 years or over	88.39	116.77	+28.38	132

The preceding table is self-explanatory and requires no further comment. A more extended comparison is made in the next table, in which the mortality of carpet and rug makers from consumption is compared with the normal mortality of occupied males from this dis-

(a) Part II, Supplement to the Sixty-fifth Annual P[illegible] the Registrar-General of Births, Deaths, and Marriages in Eng[illegible]

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ease, by divisional periods of life. The comparison shows that the mortality from consumption was above the average at ages 15 to 24, 35 to 44, and 55 to 64. Making allowance for the rather small numbers from which this table is derived, it is probably safe to assume that if the numerical basis were larger it would more conclusively indicate a comparatively high degree of consumption frequency among men in this employment, at least throughout the active working period of life.

MORTALITY FROM CONSUMPTION AMONG MALE CARPET AND RUG MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.			
	Death rate per 1,000 for all occupied males.	Death rate of male carpet and rug makers.		
		Rate for 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.64	+0.10	119
20 to 24 years	1.55	2.59	+1.04	167
25 to 34 years	2.03	1.41	− .62	69
35 to 44 years	2.74	3.14	+ .40	115
45 to 54 years	3.04	2.94	− .10	97
55 to 64 years	2.16	2.42	+ .26	112
65 years or over	1.11	1.00	− .11	90

The recorded industrial insurance mortality statistics of carpet and rug makers include 155 deaths from all causes, of which 37, or 23.9 per cent, were from consumption. Of the mortality of carpet and rug makers from respiratory diseases other than consumption, 16 were from pneumonia, 6 from asthma and bronchitis, and 4 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, it is found that 40.6 per cent of the mortality of carpet and rug makers was from diseases of the lungs and air passages. The excess in the consumption mortality of carpet and rug makers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at 15 to 24, when out of every 100 deaths from all causes, 52.9 were from consumption, against a normal expected proportion of 27.8. The analysis of the consumption mortality of carpet and rug makers in detail is set forth in the following table:

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PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **CARPET AND RUG MAKERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for carpet and rug makers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of carpet and rug makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Carpet and rug makers.	Males in registration area, 1900 to 1906.
15 to 24 years	17	9	52.9	27.8
25 to 34 years	22	10	45.5	31.2
35 to 44 years	17	6	35.3	23.6
45 to 54 years	24	5	20.8	15.0
55 to 64 years	34	4	11.8	8.1
65 years or over	41	3	7.3	2.7
Total	155	37	23.9	14.8

The preceding observations and statistical data confirm the conclusion that carpet and rug makers in the United States are as a class subject to an excessive mortality from consumption, but in particular at ages 15 to 44, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

SHODDY MANUFACTURE.

Shoddy manufacture is an important branch of the woolen and worsted industry, although the number of wage-earners employed is comparatively small. In 1905 there were 97 establishments manufacturing shoddy in the United States, employing 2,089 wage-earners, compared with 1,926 in 1900, an increase of 8.5 per cent during the intervening quinquennial period. Of the number of persons employed, 1,625 were adult males, 458 were women, and 6 were children under 16 years of age.[a] The materials used in shoddy manufacture are chiefly woolen and worsted rags, including tailors' clippings and wool extract, which is the wool fiber derived from rags, freed by a process known as carbonizing of the vegetable material with which it may have been intermixed, such as cotton and other vegetable fiber. Most of the shoddy made at the present time is all wool, and it is an error to assume that all shoddy goods are really undesirable for wearing purposes, since a very considerable proportion is cloth made wholly of wool but produced at a price which affords to poor people a satisfactory article of wear. It is also an error to assume that through shoddy loathsome diseases are conveyed to the wearer, except possibly in exceedingly rare instances, since the process of shoddy manufacture i

[a] Census of Manufactures, 1905, Part III, p. 116.

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such as to insure absolute cleanliness and the destruction of all active germs whether innocuous or pathogenic. This statement of facts is derived in part from the special census report on textiles, in which the shoddy industry is considered at some length. It is pointed out in that report that new wool or animal hair is always the basis of the yarn intermixed with a certain amount of shoddy, the fiber of which is too short to be carded and spun alone. While the completed cloth is not as durable as the cloth made from new wool, it is by no means lacking in wearing quality, as is commonly supposed, for as pointed out in the census report just referred to, shoddy in fact is one of the most useful of modern by-products in manufacture, in which the utilization of waste is an important item of economy. "Shoddy is not," in the words of the report, "woolen rags ground to powder, but rags that are picked, leaving a good staple suitable for spinning. Some of the most substantial of goods that are made, doing serviceable work for a number of years, contain a portion of shoddy mixed with wool." The process of converting the rags into wool fiber suitable for carding consists of a picking process in a machine known as a "shoddy-picker," and this constitutes a very dusty process which no doubt gives rise to health-injurious circumstances, to which, in part, reference has been made in the discussion of the hygiene of the paper industry, to which subsequent reference will be made in discussing rag collecting and rag sorting as a separate occupation. An essential difference, however, has to be kept in mind, and that is that only woolen and worsted rags are used in shoddy manufacture, while cotton and linen rags are used in paper manufacture.

In discussing the whole subject of rags and their products in relation to health, Mr. John A. E. Stuart, medical officer of health, Batley, Yorkshire, refers to the manufacture of shoddy, in part, as follows:

The dust which rises from rag machines consists of particles of wool and also of filth adherent to the various kinds of rags. It is highly irritating to all the respiratory passages, especially in those who are novices at the trade, but older hands become inured to it and tolerate it well. A train of symptoms is developed, called "shoddy fever." It is accompanied by high fever, with nasal catarrh and frontal headache, and a certain amount of bronchial catarrh. It is ushered in by shivering, malaise, and general muscular pain. It is almost indistinguishable from epidemic influenza, and if treated on similar lines recovery is soon secured. The only difference is that the catarrhal symptoms are the result of local irritation, and, consequently, when that is removed, the febrile condition soon subsides. Shoddy fever is easily induced in persons who have been out of the mill for a few weeks and return to work, in persons suffering from general catarrh, or in habitual drunkards.

A distinction is made by English writers between shoddy and mungo, the former being made from soft rags and the latter from

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cloth rags, while the commoner kind of flocks, so called, are manufactured from a variety of raw materials, including the refuse of the shoddy trade, while the superior qualities are manufactured from the better grade of raw material. The lowest class of flocks is made from old carpets, with a backing of hemp or other vegetable fiber, and the product is used for stuffing beds and articles of furniture. The preliminary methods of manufacture of shoddy, mungo, and flocks are practically the same. "Flock fever" may here be referred to. This is met with in flock manufacture, and upholsterers working with flocks are occasionally sufferers from the dust. According to Stuart, workers in shoddy mills suffer from bronchitis and emphysema of the lungs, but those who do so are the older men, who began to work before so much oil was used with the rags as is at present the case, at least in English shoddy factories. The process is known as carbonizing, which is applied to rags which have a certain amount of cotton in them, and is stated to be occasionally the cause of bronchitis and emphysema, but men working in carbonizing mills state that it is quite exceptional for men to be off on account of illness.(a)

Arlidge has described the process of shoddy manufacture in more detail than any other writer on the subject, and his observations and conclusions are quoted, in part, as follows:

The first operation consists in a more careful separation of the woolen from cotton and linen rags, as received from the rag dealers. It is one attended by the evolution of much dirty dust obnoxious to the respiratory organs, and now and then charged with animal poisons of a contagious or infectious nature. As an entirely unskilled operation, bringing small reward, sorting is undertaken by a lower class of female workers, indifferently careful of their own sanitary well-being.

The sorted rags are next torn up by a machine called a "devil," into small fragments. This process is necessarily a most dusty and otherwise objectionable one, but as it is done in an inclosed machine, comparatively little dust escapes into the surrounding air. The heavier particles fall to the bottom, whilst the lighter are driven by a strong blast of air, blown through the machine by a fan, along a capacious tube or conduit, and disposed of in an outside place. * * *

A further tearing apart, scribbling, or grinding is accomplished by a rough carding process, whereby a disintegrated mass of finely broken up wool fibers is obtained. After the free addition of vegetable oil to this material, it is transferred to "willying" and roving machines, from which it emerges as a filmy sheet, which is immediately, by a semirotary action of the machine, converted into a "shiver," ready for future spinning and weaving.

The addition of the oil to the carded material has the great sanitary gain of obviating the emission of dust in the subsequent operations. Whilst in the disintegrated shape, additions of new wool and

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a For a technical description of the process of carbonizing and the manufacture of shoddy, see Principles of Woolen Spinning, by Howard Priestman, p. 46 et seq. New York, 1908.

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of cotton are made. The wool used for cloth making is what is known as short wool, and is not suitable to the worsted spinners.

After the cloth is woven it passes through manifold other operations. Those first pursued are intended to remove defects in the tissue, and to fit it for dyeing and pressing. Others that follow are fulling (beating the cloth by heavy weights), dressing, raising the pile by teazles fixed in revolving frames, drying in hot chambers, shearing or cutting down the pile, and some finishing processes, such as subjecting the cloth to steam in order to remove the gloss consequent on previous pressure between steam rollers.

The only sanitary conditions to be found in these sundry proceedings requiring notice are the dust given off when the pile is raised in dry cloth; the elevated temperature of the drying room, reaching as it does 130° and upward, and the steam generated in the last operation described. Shearing is a comparatively leisurely proceeding, and the fine shavings cut off have a cohesive nature which opposes their diffusion in the form of dust. In the other departments enumerated, the work is performed by adult men, who are also few in number.

These observations are in part not quite applicable to American conditions, but no descriptive account of shoddy manufacture in this country has been made a matter of record with special reference to the hygienic circumstances of the occupation. In a large measure, of course, the processes subsequent to the preparation of the material for spinning and weaving are identical with those of woolen and worsted manufacture, but it is quite probable that the amount of dust generated during these processes is somewhat larger in shoddy manufacture. The investigations of Arlidge do not confirm similar inquiries as to the frequency of shoddy fever at the present time, but it is quite probable that there are sufficient variations in the methods of manufacturing, especially in the grades of rags handled, which may easily account for the absence of shoddy fever in one locality and its occurrence in another.

These brief observations are concluded by an extract on the manufacture of shoddy, included in a report on dangerous occupations by the state board of health of Massachusetts, published in 1907:

Shoddy is made from woolen rags, which come ordinarily to the mill in the form of bales. The first process, after the bales are opened, is that of sorting, which is done by women, who pick out all cotton rags, silk mixtures, buttons, and other foreign matters. The selected rags are treated in a large vat with dilute sulphuric acid, which attacks and destroys all cotton fibers which may be present, and then they are removed from the bath and allowed to drain. Next they are spread on racks over steam pipes, and dried at a temperature of about 100° F. in a confined space, which, before the dried rags are removed each day, is thoroughly ventilated by opening the windows and operating a blower, so that the men who do the work may not be exposed to the fumes. The rags are next washed, and then are picked apart by machinery. The product is a pure wool of short fiber and

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very clean, which is sold either dyed or undyed. Two establishments of this class were examined, one of which is poorly lighted, inadequately ventilated, dusty, and ill kept; the other is light, clean, and well ventilated. Some of the women employed appeared to be in poor physical condition.

There are no official vital statistics of this occupation, but it is evident that while the circumstances of the employment are apparently decidedly objectionable, and while the dust generated during certain processes is considerable, the evidence that the employment itself is distinctly injurious to health is not a matter of trustworthy record, nor is it even conclusively evident that there is any particular amount of disease caused by employment even in the most objectionable branches of the industry which have to do with rag sorting and grinding, which will be subsequently considered as a separate occupation.

THE RAG INDUSTRY.

Rag collecting, sorting, and grinding, for subsequent use in paper mills, shoddy factories, and for other industrial purposes, include a group of occupations peculiarly exposed to the risk of dust inhalation, but where the dust is of such a mixed character that it is extremely difficult to define with accuracy the quality of the dust or the character of its ingredients. The conditions under which this work is carried on vary so widely, according to locality and circumstances, that no definite line can be drawn. The employment has always attracted the attention of those who have written on the hygiene of occupations, chiefly because of the low status of the persons employed and the high degree of theoretical risk to infectious diseases, and the probably health-injurious results otherwise due to the continuous and considerable inhalation of health-injurious dust. Since previous references have been already made to this employment in discussing paper and shoddy manufacture, it is only necessary here to very briefly restate the general facts of the sanitary aspects of the industry as they have been presented by the most recent authorities on the subject.

Dr. B. W. Richardson, writing in 1876, referred to an earlier article in the Journal of Public Health for January, 1859, by Mr. J. J. Murray, of Edinburgh, who had investigated the health of those who worked among rags, including such as collected junk and other second-hand materials. According to Richardson, "Mr. Murray expected, very naturally, that he should find amongst the workers in these tattered and filthy stores some suffering from contagion, others from the products of decay of the animal and vegetable constituents of the rags; others from inhaling and swallowing dust. An inquiry made by him at twenty-three paper mills to which rags were sent and

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of twenty-three rag collectors in Edinburgh led to the curious return that epidemic or contagious disease from this source was practically unknown amongst workers in rags, that there was no evidence of disease from the decomposition, but that some workers suffered from bronchial affections, cough, and shortness of breath from inhaling the dust which is cast off in large quantities from the rags, when they are made to revolve in the wire-cloth cylinder which is used to free them from dirt and dust." The paper makers of whom inquiry was made as to diseases met with among workers in rags were of the opinion that, with the exception of the effects of dust, there was no unfavorable circumstance, and they referred to one employer who, during thirty years, with an average of 10 employees handling 200 tons of rags a year, reported only one death during a period of ten years.(a) Many similar investigations made during the intervening period have led to very much the same conclusions. There is no doubt that infectious diseases are conveyed through rags, and the experience in Massachusetts, at least at Holyoke, has been to the effect that outbreaks of smallpox have been of greater frequency in that locality than in any other portion of the State, while according to D'Arcy Power, writing in Oliver's Dangerous Trades, "anthrax or charbon, sometimes known as splenic fever, or malignant postule," is occasionally conveyed through rags to rag sorters, upholsterers, mattress makers, etc., but cases of this disease, in this country at least, have been extremely rare.

Dr. John A. E. Stuart, in an article on "Rags and their products in relation to health," contributed to the same work on dangerous trades, expressed the opinion that people who sorted rags were occasionally bronchitic and asthmatic from the dust which arises from them, but he had seldom met with this condition in rag sorters, although he had known individuals who had been compelled to wear respirators when sorting on account of the dust met with in the occupation. He states that—

In the case of very dirty rags derived from dust heaps, rags which have been exposed to rain in many cases, it is probable that after drying the dust would be of a septic character and might induce sore throat. Rags from surgical hospitals are decidedly dangerous. Most persons who work as sorters are infested with fleas, which simply swarm among the rags, especially the mungo variety.

Thomas Oliver, M. D., in his treatise on Diseases of Occupation, after observing that rag sorters in England are generally women and that the work is anything but pleasant, states that—

This is especially the case with woolen rags, for they so frequently harbor fleas and other pests. All bundles of rags before being opened ought, therefore, to be first disinfected so as to destroy para-

[a] Scientific American Supplement, No. 10, March 4, 1876.

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sites, and since rags from the surgical wards of hospitals and private patients often contain septic material, the importance of making disinfection obligatory is at once apparent. It is when the bundles are first opened that the danger is greatest. The dust given off is irritating to the respiratory passages and causes dryness of the throat. During the grinding of the rags by machinery considerable quantities of dust are thrown off, inhalation of which is extremely trying to new hands, but which has little or no immediate effects on the older work people. Those persons who are new to the trade develop what is known as "shoddy fever," the symptoms of which are a rise of temperature, severe headache, signs of bronchial catarrh, and running at the nose. The work people shiver as if they were going to have a severe fever, and they complain of muscular pains. The symptoms are not unlike those met with in influenza. They rapidly decline on the work people absenting themselves from the factory for a few days, but they are apt, in many people, to recur on their return to work. Rags which contain a good deal of cotton have to be carbonized by being plunged into a bath of sulphuric or hydrochloric acid. By this means the cellulose or vegetable part of the fiber is destroyed and the wool can be thus extracted from cotton fabrics. When the rags are subsequently heated to dryness and are beaten, a considerable quantity of fine dust is evolved, some of which is inflammable and may be the cause of an explosion.

In this connection a brief reference may be made to the handling of old paper received at paper mills for the purpose of being reconverted into new paper, and which in all essentials resembles the handling, sorting, and grinding of cotton and linen rags. Old paper, according to the report of the Massachusetts state board of health, is received in the form of bales, which are opened by men and sorted by women and girls. It is then conveyed to the duster on an endless belt, and in this machine it is freed from dust and torn into pieces by means of revolving wooden rolls bearing iron pins. The pieces of paper are then sorted over like rags, but are not put through the choppers, passing immediately from the dusters, so called, to an open cooking tub, subsequent to which the dust factor is reduced to a minimum. The results of the investigations by the Massachusetts state board of health are summed up as follows:

From the above description it will have been noted that from the opening of the bales of rags or paper to the cooking process the various steps involve exposure to varying quantities of dust, the greatest amount being given off in the earliest operations. It appears that, no matter how constructed, how carefully inclosed, how well provided with blowers and dust flues, a certain amount of dust is inevitable in the rooms where the threshers and choppers are installed and operated, excepting when unusually clean materials are being handled. If the machines are loosely sheathed or are not adequately equipped with dust-removal devices, the amount given off may be considerable to enormous, according to material. Unless the most dusty rooms are tightly partitioned off from other less dusty ones—

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as, for example, a threshing from a sorting room—the amount of dust in the air in the latter must necessarily be augmented. In a number of the mills visited the air of the whole rag department was observed to be filled with dust and lint.

The character of the dust brought in with rags varies considerably, as would naturally be surmised from their many different places of origin. Some of the employees state that while at first they suffered from sore throat, cough, and loss of sleep, after a time they became so habituated that only an occasional bale causes any discomfort. In some mills it was observed that the dust was far more irritating than that met with in others; especially is this true of those in which burlap is used. Some men assert that the dust from rags of one color may be worse than that from the same kind of cloth differently dyed. Some say that some bales are sickening in their effects, even to old hands.

Of the threshing rooms visited, a very small number, in which the machines were exceptionally good and where the cleanest grade of rags were being handled, showed no dust; somewhat more, equipped with the same grade of machines and working on the same kind of material, showed but little dust; and the remainder showed considerable to much. About 11 per cent of the sorting rooms were dustless, about 25 per cent were not very dusty, and the balance showed considerable to much. Of the cutting rooms, about 7 per cent showed little or none and the remainder considerable to much. In a number of establishments sorting is conducted in large, airy, well-lighted, mechanically ventilated rooms; but in some of these cutting machines have been installed, and they create considerable dust. Indeed, in the matter of separation of the several processes mills vary; in some the duster and cutter machines are installed in separate rooms, in some they are in the same room.

In a majority of the mills visited a portion of the employees are exposed to an excessive quantity of dirt, dust, and lint; and in most of this majority the persons so exposed show not a few who are pale and sickly in appearance. In 19 mills girls under 18 years of age were noted as being employed, in no great numbers, in rooms which were very dusty.

In the department where the paper is actually made there is no dust, but the temperature is sometimes excessive and the air saturated with moisture. The latter condition is not only promotive of discomfort, but exposes the paper to damage through condensation and dropping, wherefore exhaust ventilation is commonly resorted to.

The paper industry, being one which exposes its followers to every kind of dust and dirt which can be carried in rags, is naturally looked upon by many as a dangerous trade. It is unfortunate that it is impossible from statistics available to determine in what relation this industry stands to others of the dusty occupations. The death certificates of the city of Holyoke, the center of the business in this State, were examined; but they proved to be too indefinite for use, since the terms "paper worker" and "mill hand" are commonly applied to all employees, whether engaged in the dusty or nondusty processes. Comparing, however, the death rates from tuberculosis, pneumonia, and bronchitis during the years 1901–1904 with those of

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the State at large, it was found that the Holyoke rates were under, rather than over, the average.

There are no vital statistics of this employment nor any published industrial mortality experience, but the foregoing observations, based upon careful inquiry into the actual conditions under which work is carried on in this branch of industry, would seem to warrant the opinion that there are serious health-injurious circumstances connected with the employment, but for a definite conclusion there are at present no satisfactory statistical data for the United States.

UPHOLSTERERS AND HAIR MATTRESS MAKERS.

Upholstering is a well-defined trade, including the making and renovating of mattresses, but in occupation vital statistics the employment is, as a rule, included with other more or less dissimilar occupations. In the vital statistics of the census of 1890 and that of 1900, as well as in the occupation mortality statistics for England and Wales, upholsterers are included with cabinetmakers, for which there is but very slight warrant in practical experience. As a result the statistics are not entirely determining for cabinetmakers any more than they are conclusive for upholsterers. Since it is rare that a cabinetmaker also performs the duties of an upholsterer, and vice versa, it would seem advisable to consider this occupation entirely separate and distinct, and more so in view of the fact that the exposure to health-injurious dust is chiefly that of vegetable and animal fiber dust in contrast to the exposure to wood and mineral dusts in the work of the cabinetmaker. It is fortunate that in the occupation statistics of the census the employment has been kept separate, and it is of both interest and value to note that out of 28,001 male upholsterers, aged 16 or over, 977, or 3.5 per cent, had attained to ages 65 or over.(c)

The work of the upholsterer consists chiefly in the covering, lining, and stuffing of upholstered furniture, while mattress making and renovating practically constitutes a separate trade. To a limited extent upholsterers are employed in the renovating of feather pillows and mattresses, but this practice never has attained to considerable proportions in this country, though it is extensively followed abroad. Mattresses are made chiefly of curled hair, moss, corn husks, straw, and flock, and the conditions vary so much that it is very difficult, if not next to impossible, to define with accuracy the kind of dust to which upholsterers are chiefly exposed. Both Arlidge and Oliver have discussed the hygiene of the upholsterer's trade. Arlidge points

c Report of the Twelfth Census on Occupations, page 18.

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out that the upholsterer's occupation is one which is concerned with the handling of feathers, flock, down, hair, etc., each and all being materials laden with dust and almost necessarily productive of respiratory troubles, particularly in the preparatory operation of cleansing by means of beating and washing. Arlidge treats at some length of flock making, which has been referred to under "shoddy manufacture." Of the large number of miscellaneous materials used by upholsterers, all of which are more or less productive of dust during the necessary manipulation, Arlidge mentions horse and cow hair, feathers, wool waste, cotton, flock, refuse of raw cotton, straw, cocoanut fibers, and seaweed. Most of these substances, in his opinion, are harmless unless they have been previously used or in some other way have acquired infectious qualities. Oliver is also of the opinion that the dust of feathers, flock, hair, etc., as produced in the upholsterer's occupation, is provocative of respiratory troubles. He holds that if the rags, feathers, and hair have not been previously cleansed the dust not only causes bronchial irritation, but may be the means of causing infectious diseases, such as smallpox, erysipelas, and intestinal derangements, such as vomiting and diarrhea.

Oliver refers to the manufacture of mattresses as an unhealthful occupation on account of the dust that escapes from wool and horsehair during the operation of carding, causing cough, difficulty in breathing, and retching, and if the materials have not been properly sterilized the dust may, in his opinion, cause blood poisoning. He refers to a well-known reference in the treatise by Ramazzini on the diseases of the Jews, who were at that time engaged chiefly in the handling or remaking of old materials, just as at the present time the secondhand trade is practically limited to the Hebrew race. Ramazzini states that in the beating of the old wool, which had been daubed with filth, a great deal of dust was inhaled, which disposed the workmen to a violent cough and a difficulty of breathing, and that he himself had observed those who had followed this occupation to have reduced themselves to an incurable consumption.

The reference to this aspect of the employment by Oliver is as follows:

Mattresses that have been lain upon by persons who have died of infectious diseases occasionally find their way into third-rate upholsterers' shops, where their contents are picked and mattresses are remade. It is very dusty work when the picking is done by hand, and, besides, there escapes an unpleasant, sickening odor which causes headache and a feeling of malaise. When mattresses have become fouled in places by discharges from patients suffering from infectious diseases, considerable risk is incurred by those who by hand tease the contents of such bespoiled bedding.

In the Southern States large quantities of so-called Spanish moss are gathered and subjected to a process known as moss ginning, to

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prepare the material for mattress making and other purposes in upholstery, either alone or as a mixture with hair or other products. The work is extremely dusty, and the character of the dust inhaled has not been properly determined, consisting, however, chiefly of earthy matter and vegetable fiber.

The upholsterer's employment has been already referred to in the discussion of the vital statistics of cabinetmakers, and while the statistical facts can not be separately stated the employments, as a group, are evidently subject to a decidedly high mortality from consumption. The results of the census investigation in 1890 were fully confirmed by the subsequent census returns for 1900, proving that the death rate of cabinetmakers and upholsterers as a group was excessive from consumption and other diseases of the respiratory system. Since only the rates for 1900 were referred to under cabinetmakers, the rates for 1890 are here included. The consumption death rates of cabinetmakers and upholsterers during that year were 4.57 per 1,000 in the registration States, and nearly 5 per 1,000 in the registration cities only, while the mortality from other respiratory diseases as a group was 3.03 per 1,000 in the registration States and 3.45 in the registration cities.

The occupation mortality statistics of Rhode Island for the decade 1897 to 1906 returned only 25 deaths of upholsterers from all causes. Of this number, 6, or 24 per cent, were from consumption, against 17.8 per cent expected on the basis of the mortality of all occupied males in the State. The mortality from respiratory diseases other than consumption was returned as 3 deaths, or 12 per cent of the total, against 12.5 per cent expected. Of the total mortality of upholsterers, 9 deaths, or 36 per cent, were from diseases of the lungs and air passages, against a normal expected proportion of 30.3 per cent for all occupied males in Rhode Island.

The recorded industrial insurance mortality statistics of upholsterers include 381 deaths, of which 118, or 31 per cent, were from consumption. Of the mortality of upholsterers from respiratory diseases other than consumption, 33 deaths were from pneumonia, 5 from asthma and bronchitis, and 8 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, it is found that 43 per cent of the mortality of upholsterers was from disease of the lungs and air passages. The excess in the consumption mortality of upholsterers is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at 25 to 34, when, out of every 100 deaths from all causes, 58.5 were from consumption, against a normal expected proportion

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of 31.3. The analysis of the consumption mortality of upholsterers in detail is set forth in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **UPHOLSTERERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for upholsterers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of upholsterers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Upholsterers.	Males in registration area, 1900 to 1906.
15 to 24 years	39	15	38.5	27.8
25 to 34 years	65	38	58.5	31.3
35 to 44 years	79	38	48.1	23.6
45 to 54 years	73	18	24.7	15.0
55 to 64 years	62	3	4.8	8.1
65 years or over	63	6	9.5	2.7
Total	381	118	31.0	14.8

The recorded industrial insurance mortality statistics of mattress makers include 41 deaths, of which 16, or 39 per cent, were from consumption. There were 6 deaths of mattress makers from respiratory diseases other than consumption, all of these having been caused by pneumonia. If the deaths from consumption and from other respiratory diseases are combined, it is found that 53.7 per cent of the total mortality of mattress makers was from diseases of the lungs and air passages. While the aggregate number of deaths of mattress makers is too small to warrant final conclusions, the statistics are given in detail for the reason that mattress making and upholstering are closely related and the consideration of the two employments may very properly be combined. The consumption mortality of mattress makers is shown to have been in excess of the normal at all ages and in this respect the statistics confirm those for upholsterers. The analysis of the mortality of mattress makers from consumption is set forth in detail in the table below:

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PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG MATTRESS MAKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for mattress makers from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of mattress makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Mattress makers.	Males in registration area, 1900 to 1906.
15 to 24 years	9	4	44.4	27.8
25 to 34 years	7	3	42.9	31.3
35 to 44 years	11	4	36.4	23.6
45 to 54 years	5	2	40.0	15.0
55 to 64 years	8	3	37.5	8.1
65 years or over	1	.....	.....	2.7
Total	41	16	39.0	14.8

The available information confirms the conclusion that upholsterers and mattress makers as a class are subject to an excessive mortality from consumption, but in particular at ages 15 to 54, and this excess, in view of the conditions of labor briefly described, is in a large measure the result of health-injurious circumstances connected with the employment.

SUMMARY OF CONCLUSIONS REGARDING OCCUPATIONS WITH EXPOSURE TO ANIMAL AND MIXED FIBER DUST.

In the preceding observations and statistical data nine specific occupations with exposure to animal and mixed fiber dusts have been considered in more or less detail. The data for some of the occupations are too meager to warrant final conclusions, but the information here presented is decidedly suggestive of health-injurious conditions in certain of these occupations.

The United States census returns of 1900 give the age distribution of hat and cap makers, silk operatives, woolen mill operatives, carpet factory operatives, and upholsterers, the aggregate number of the males of known ages 15 years of age or over being 114,485. Of this number only 2,805, or 2.5 per cent, had attained to the age of 65 years or over, against a normal expected proportion of 4.6. This fact is decidedly suggestive of conditions more or less unfavorable to health and life in occupations exposing to animal and mixed fiber dusts. The details of the age distribution are given in the following table, by divisional periods of life, together with the corresponding per-

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centage distribution of all occupied males, the data for both groups being derived from the United States census of 1900:

NUMBER AND PER CENT OF MALES IN EACH AGE GROUP IN OCCUPATIONS EXPOSED TO ANIMAL AND MIXED FIBER DUSTS, COMPARED WITH THE NUMBER AND PER CENT IN ALL OCCUPATIONS IN THE UNITED STATES, 1900.

[From report of the Bureau of the Census on Occupations, 1900.]

Age.	Males in occupations exposed to animal and mixed fiber dusts.		All occupied males.	
	Number.	Per cent.	Number.	Per cent.
65 to 24 years	38,748	33.8	5,933,720	26.0
15 to 34 years	31,928	27.9	5,993,847	26.3
25 to 44 years	22,096	19.3	4,704,682	20.6
35 to 54 years	12,532	10.9	3,250,259	14.3
45 to 64 years	6,376	5.6	1,856,181	8.1
55 years or over	2,805	2.5	1,063,856	4.7
Total	114,485	100.0	22,802,545	100.0

According to this analysis the proportion of males aged 15 to 34 was 61.7 per cent, or nearly two-thirds of the total number in occupations exposed to animal and mixed fiber dusts, against 52.3 per cent for all occupied males. The percentage of occupied males in this group of occupations living at age 35 or over was therefore much less than would be expected on the basis of all occupied males. The actual age distribution would indicate that the conditions of employment in the various occupations considered predispose more or less to a high mortality largely the result of exposure to health-injurious dust.

It is impossible to present a combined summary of the United States census vital statistics of persons employed in the occupations considered in this group. The only occupation for which the facts are given in the census returns is the group entitled hat and cap makers. The vital statistics for this class of employees, when compared with those for occupied males generally, are very suggestive of unfavorable health conditions in occupations exposing to animal and mixed fiber dusts. The death rates of male hat and cap makers are shown to be higher than for all occupied males at all the divisional periods of life for which the facts are obtainable in the census returns. At ages 15 to 24 the general death rate per 1,000 of hat and cap makers was 5.4 against 5.1 expected; at ages 25 to 44 the rate was 13.1 against 8.8 expected; at ages 45 to 64 the rate was 32.9 against 19.9 expected; and at ages 65 or over the death rate of hat and cap makers was 173.1 against 98.4 expected. The death rate per 1,000 employees from consumption was 4.2 for hat and cap makers, according to the census returns, against 2.4 expected; and the death rate from respiratory diseases other than consumption was 2.6 against 2.0 expected.

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The details of the mortality of male hat and cap makers by age groups are given in the following table, together with the corresponding death rates for all occupied males, all of the data being derived from the United States census of 1900:

MORTALITY FROM ALL CAUSES AMONG MALE HAT AND CAP MAKERS IN THE REGISTRATION STATES, COMPARED WITH THAT OF ALL OCCUPIED MALES IN THOSE STATES, 1900, BY AGE GROUPS.

[From the report of the Bureau of the Census on Vital Statistics, 1900.]

Age.	Male hat and cap makers.			All occupied males.		
	Number employed. (a)	Number of deaths from all causes.	Rate per 1,000 from all causes.	Number employed.	Number of deaths from all causes.	Rate per 1,000 from all causes.
15 to 24 years	3,148	17	5.4	1,259,471	6,486	5.1
25 to 44 years	7,023	92	13.1	2,680,241	23,541	8.8
45 to 64 years	2,249	74	32.9	1,282,259	25,532	19.9
65 years or over	260	45	173.1	283,310	27,888	98.4
Total	12,680	228	[b] 18.0	5,505,281	83,447	[c] 15.2

[a] The actual numbers employed in each age group are not given in the census report on vital statistics. The numbers here given are estimated by dividing the number of deaths by the death rate, as shown in the census, and multiplying the quotient by 1,000.
[b] From consumption there were 53 deaths, or a rate of 4.2; from other diseases of the respiratory system there were 33 deaths, or a rate of 2.6.
[c] The rate of mortality from consumption was 2.4; from other diseases of the respiratory system, 2.0.

The occupation mortality statistics of Rhode Island are available for only two specific occupations in this group, upholsterers and wool sorters. A considerable number of persons are employed in woolen and worsted mills in Rhode Island, but they are returned in the mortality statistics under general terms, such as operatives, spinners, weavers, etc., and the more important of these groups have been already considered in the discussion of cotton mill employees. In Rhode Island during the decade 1897 to 1906, upholsterers and wool sorters combined returned only 62 deaths from all causes. Of this number 11, or 17.7 per cent, were from consumption, against 17.8 expected on the basis of occupied males generally in Rhode Island. The mortality from respiratory diseases other than consumption in the two occupations of this group was 8, or 12.9 per cent, against 12.5 per cent expected. These numbers are too small to form the basis for a final conclusion, but the facts are presented to make the analysis complete.

The English vital statistics for this group of occupations are available for furriers, hatters, silk mill employees, woolen and worsted mill employees, and carpet and rug makers. When the statistics for these occupations are combined they exhibit high death

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rates from all causes at ages 20 to 24 and at ages 45 or over. The details are set forth in the following table:

MORTALITY FROM ALL CAUSES, FROM CONSUMPTION, AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM IN **OCCUPATIONS EXPOSED TO ANIMAL AND MIXED FIBER DUSTS**, COMPARED WITH THAT OF ALL OCCUPIED MALES, IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 due to all causes among—		Death rate per 1,000 due to consumption among—		Death rate per 1,000 due to other diseases of the respiratory system among—	
	All occupied males.	Occupations exposed to animal and mixed fiber dusts.	All occupied males.	Occupations exposed to animal and mixed fiber dusts.	All occupied males.	Occupations exposed to animal and mixed fiber dusts.
15 to 19 years.....	2.44	2.38	0.54	0.61	0.24	0.32
20 to 24 years.....	4.41	5.07	1.55	2.49	.48	.29
25 to 34 years.....	6.01	5.56	2.03	2.20	.77	.72
35 to 44 years.....	10.22	9.48	2.74	2.68	1.66	1.45
45 to 54 years.....	17.73	17.78	3.04	3.24	3.32	3.13
55 to 64 years.....	31.01	37.33	2.16	2.65	6.54	7.02
65 years or over...	88.39	120.64	1.11	1.81	17.77	25.12

The table shows that the mortality from consumption among men in occupations with exposure to animal and mixed fiber dusts was excessive at all ages except 35 to 44, when the consumption mortality rate was 2.68 for the occupations of this group, as against 2.74 for all occupied males. The excess in the mortality from consumption was highest at ages 20 to 24, when the rate was 2.49 for the occupations of this group against 1.55 for all occupied males. The mortality from respiratory diseases other than consumption was somewhat fluctuating when compared with the corresponding rates for all occupied males; nevertheless the differences were slight, except at ages 65 or over, when the mortality for the combined occupations of this group was 25.12 per 1,000 against 17.77 for all occupied males.

The industrial insurance mortality statistics are available for seven occupations included in this group, returning in the aggregate 1,915 deaths of males from all causes at ages 15 or over. Of this number 615, or 32.1 per cent, were from consumption. The deaths from respiratory diseases other than consumption numbered 242, or 12.7 per cent. The expected consumption mortality on the basis of the mortality of males in the registration area of the United States for the seven-year period 1900 to 1906 was 14.8 and the expected mortality from other respiratory diseases was 11.7. When the mortality from consumption and from other respiratory diseases is combined the proportionate percentage of deaths of males in occupations with exposure to animal and mixed fiber dusts is found to be 44.8 against 26.5 expected. The following table gives the summary statistics in

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detail for the seven occupations in this group for which the industrial insurance mortality experience is available:

PROPORTIONATE MORTALITY FROM CONSUMPTION IN OCCUPATIONS EXPOSED TO ANIMAL AND MIXED FIBER DUSTS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for deaths in occupations exposed to animal and mixed fiber dusts are from experience of an industrial insurance company; figures for males in registration area are computed from mortality statistics of the United States census.]

Age at death.	Deaths in occupations exposed to animal and mixed fiber dusts, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Occupations exposed to animal and mixed fiber dusts.	Males in registration area, 1900 to 1906.
15 to 24 years	248	106	42.7	27.8
25 to 34 years	364	194	53.3	31.3
35 to 44 years	391	189	48.3	23.6
45 to 54 years	292	74	25.3	15.0
55 to 64 years	324	39	12.0	8.1
65 years or over	296	13	4.4	2.7
Total	1,915	[a]615	[a]32.1	[b]14.8

[a] There were also 242 deaths from other diseases of the respiratory system, or 12.7 per cent of the deaths from all causes.
[b] The per cent of deaths from other diseases of the respiratory system in the registration area was 11.7.

It is evident from the foregoing observations and statistical data relating to typical employments with exposure to animal and mixed fiber dusts that the effects of such exposure are injurious to health, and particularly so in early life. The summary table shows that the mortality from consumption of employees in this group of occupations is from 50 to 100 per cent higher at all ages than would normally be expected.

GENERAL SUMMARY OF RESULTS.

A general summary of the preceding observations and statistical data does not seem necessary for the present purpose, which is to emphasize the degree of consumption frequency in different occupations rather than the differential degree of lung injury resulting from exposure to particular kinds of dust. In an address on "Tuberculosis as an industrial disease," read before the Sixth International Congress on Tuberculosis, by the writer, the latter aspect of the problem was enlarged upon to a certain extent. The discussion was limited, however, to industrial insurance mortality experience, at the same time including occupations exposing also to general organic and municipal or street dust, which it was not feasible to include in the pres-

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ent discussion. From the address referred to the following extract is made:

When all the occupations for which the information is available, inclusive of many other than the thirty employments considered in this discussion, are combined, the proportionate mortality from consumption is 28.0 per cent of the mortality from all causes at ages 15 and over. In the group of occupations exposing chiefly to the inhalation of metallic dust the proportionate mortality from consumption was 37.4 per cent; in occupations exposing to animal and mixed fiber dust, 32.3 per cent; in occupations exposing to mineral dust, 28.6 per cent; in occupations exposing to municipal or street dust, 27.5 per cent; in occupations exposing to vegetable fiber dust, 27.4 per cent; and in occupations exposing to organic dust, 23.7 per cent. These percentages of consumption frequency are derived from an analysis of 22,987 deaths from all causes in the occupations included in the investigation.

The analysis may be extended to divisional periods of life, to emphasize the more immediate effects of health-injurious dust inhalation, and beginning with ages 15 to 24 the proportionate mortality from consumption was highest in occupations exposing to the inhalation of animal and mixed fiber dust, or 49.6 per cent of the mortality from all causes. In occupations exposing to metallic dust it was 47.1 per cent; to organic dust, 40.9 per cent; to municipal or street dust, 39.8 per cent; to vegetable fiber dust, 39.1 per cent; and to mineral dust, 31.7 per cent.

At ages 25 to 34 the proportionate mortality from consumption was highest in occupations exposing to the inhalation of metallic dust, or 56.7 per cent of the deaths from all causes. In occupations exposing to the inhalation of vegetable fiber dust it was 53.3 per cent; of organic dust, 50.1 per cent; of animal and mixed fiber dust, 49.7 per cent; of mineral dust, 47.6 per cent, and of municipal or street dust, 43.5 per cent.

At ages 35 to 44 the proportionate mortality from consumption was highest in occupations exposing to the inhalation of metallic dust, or 43.0 per cent of the deaths from all causes. In occupations exposing to the inhalation of animal and mixed fiber dust it was 40.4 per cent; of vegetable fiber dust, 39.8 per cent; of mineral dust, 36.3 per cent; of organic dust, 36.2 per cent, and of municipal or street dust, 34.6 per cent.

At ages 45 to 54 the proportionate mortality from consumption was highest in occupations exposing to the inhalation of mineral dust, or 27.9 per cent of the deaths from all causes. In occupations exposing to the inhalation of metallic dust it was 23.6 per cent; of animal and mixed fiber dust, 23.2 per cent; of vegetable fiber dust 22.9 per cent; of organic dust, 21.9 per cent, and of municipal or street dust, 14.2 per cent.

At ages 55 to 64 the proportionate mortality from consumption was highest in occupations exposing to the inhalation of mineral dust, or 16.2 per cent of the deaths from all causes. In occupations exposing to the inhalation of vegetable fiber dust it was 11.6 per cent; of metallic dust, 11.5 per cent; of organic dust, 11.4 per cent; of animal and mixed fiber dust, 11.2 per cent, and of municipal or street dust, 10.8 per cent.

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At ages 65 and over the proportionate mortality from consumption was highest in occupations exposing to the inhalation of mineral dust, or 6.8 per cent of the deaths from all causes. In occupations exposing to the inhalation of organic dust it was 4.6 per cent; of metallic dust, 3.8 per cent; of animal and mixed fiber dust, 3.7 per cent; of vegetable fiber dust, 3.7 per cent, and of municipal or street dust, 2.9 per cent.

From the same address is quoted the following concluding portion summarizing the social and economic aspects of the tuberculosis problem in its relation to American industry:

The problem of occupation mortality and tuberculosis, with special reference to that period of life at which the degree of consumption frequency is most excessive, may now be briefly restated as follows: The census mortality rate of 1900 for men in gainful occupations was 15.0 per 1,000 and the consumption death rate 2.4 or 16.0 per cent of the mortality from all causes. Among men in manufacturing and mechanical industries the general death rate was 13.8 per 1,000, and the consumption death rate 2.6, or 18.8 per cent of the mortality from all causes. Among men in agricultural, transportation, and other outdoor occupations (including, however, a considerable proportion of persons of advanced years) the general death rate was 15.8 per 1,000, and the consumption death rate 1.5, or 9.5 per cent of the mortality from all causes. Contrasting the consumption death rates in these two groups of employments, the enormous waste of human life in industry becomes readily apparent. If the consumption mortality in dusty trades could be reduced to the corresponding proportion for men in outdoor occupations, a very large number of lives would be saved and continue for many years, which are now, to a large extent, needlessly wasted. The problem may be emphasized by a few specific illustrations of occupations exceptionally exposed to the risk of dust inhalation. The census mortality rate for marble and stone cutters was 14.9 per 1,000, and the consumption death rate 5.4, or 36.2 per cent of the mortality from all causes. The general death rate of cigar makers was 18.7 per 1,000, and the consumption death rate 4.8, or 27.7 per cent of the deaths from all causes. The general death rate of printers and compositors was 12.1, and the consumption death rate 4.4, or 36.4 per cent of the mortality from all causes, while for the strictly outdoor labor class, that is, farmers, planters, and farm laborers, the general death rate was 17.6 per 1,000, but the consumption death rate was only 1.1, or 6.25 per cent of the mortality from all causes. Granting that these rates are not entirely trustworthy, and that the census method of mortality investigation at that time was not as technically perfect as it is at present, and granting further that all occupation mortality data have their inherent defects, when derived from general methods of population enumeration and the methods in vogue in the registration of deaths, there is not the slightest reason to question the approximate accuracy of the foregoing rates and conclusions, which are in strict conformity to the other facts previously presented.

Estimating the wage-earning population (males and females) of the United States at ages 15 or over for 1908 at 31,768,943, and assuming a consumption death rate among this element of the population

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of 2.2 per 1,000,(a) the number of deaths from consumption among wage-earners during 1908 would be approximately 69,892. Since it is possible by intelligent factory inspection and control, and with special regard to ventilation (that is, the removal of injurious dust particles at the point of their origin) to almost entirely eliminate the conditions injurious to health and life in factories and workshops and industry generally, it is not going too far to advance it as a fundamental principle of sanitary legislation that the consumption death rate among wage-earners can be reduced, by intelligent methods, to a ratio as low as 1.5 per 1,000.(b) On the above basis such a reduction would result in an annual saving of approximately 22,238 human lives. Since the average age at death of persons 15 years of age or over dying from consumption in the registration area of the United States is 37.4 years and probably not much more than 32 years for persons employed in strictly dusty trades, and since the normal average age at death in the mortality from all causes for persons 15 years of age or over is 52.8 years, there would be an average expected gain of at least 15.4 years of life for every death from consumption avoided by rational conditions of industrial life. Such a gain would represent a total of 342,465 years of additional lifetime, and by just so much the industrial efficiency of the American nation would be increased. If we place the economic value or net result of a year's lifetime at only $200, the total average economic gain to the nation would be $3,080 for every avoidable death of a wage-earner from consumption, representing the enormous total of $68,493,000 as the aggregate annual financial value in the probable saving in years of adult human life. With such results clearly within the range of practical attainment, nothing within reason should be left undone as a national,

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(a) This rate is based upon the number of gainfully employed persons (male and female) 10 years of age or over in the registration States in 1900 and the number of deaths among that element of the population during the census year. Unfortunately it has not been possible to calculate the corresponding consumption death rate for persons gainfully employed of ages 15 or over, as the necessary data were not included in the census reports. The consumption death rate of 2.2, however, would be raised rather than lowered if it were possible to get at the facts, because the consumption death rate is lower at ages 10 to 14 than at ages 15 or over. The calculations based upon the consumption death rate of 2.2 per 1,000 of the gainfully employed are therefore conservative, being in all probability rather an under than an over statement of the facts.

(b) See article on "Mortality from consumption in small cities," by Frederick S. Crum, in Quarterly Publications of the American Statistical Association for December, 1907, pp. 448–479. In this article, which is based on the mortality statistics of the United States census, it is shown that the average annual death rate from consumption in 209 small cities in the United States for the years 1901 to 1905 was 1.58 per 1,000, and in 30 of these cities the rate was below 1.0 per 1,000. If nine cities with over 15 per cent of Negro population are discarded it is shown that the consumption mortality for the remaining 200 small cities was 1.51 per 1,000.

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state, and individual, or social duty to prevent that needless, but now enormous, loss of human life from consumption due to unfavorable conditions in American industry.

THE PROBLEM OF VENTILATION AND DUST REMOVAL IN INDUSTRY.

The statistical evidence presented in the preceding discussion of dusty trades is entirely conclusive that an excessive degree of consumption frequency in any particular occupation depends primarily or largely on the kind and quantity of dust inhaled by the workmen. All who have written upon the subject with authority emphasize the importance of adequate ventilation and dust reduction or removal by artificial means and methods, but the most conclusive evidence has been presented in two reports of an English departmental committee appointed to inquire into the ventilation of factories and workshops, the first being published in 1902, the second in 1907. The reports warrant the conclusion that effective ventilation of factories and workshops and the artificial removal of dust at the point of origin is entirely practicable and possible at moderate expense. Since these reports are not generally accessible, they are here quoted from at some length. The committee in its first report, in part, said as follows:

It is evident that the air breathed by the employees in a factory or workshop can be kept pure in two ways: (1) By constantly renewing from outside the whole of the air of the room in which work is carried on; (2) by removing impurities locally, or otherwise preventing them from ever mixing with the air breathed. The former process may be distinguished as general and the latter as local ventilation. As a general rule, dust and fumes can best be dealt with by local ventilation or by other means, whereas impurities due to the presence of employees and of lights burning must be got rid of by general ventilation.

The first report was limited to considerations of general ventilation, while the second considered at length the problem of local ventilation and other means of preventing injury to health by dust and fumes. The committee called attention to the agreement of authorities that health depends to a large extent on a constant and abundant supply of air which is uncontaminated by any substances which would cause discomfort or which contain poisonous, infective, or otherwise harmful material. By section 7 of the Factory and Warkshop Act, 1901, it was provided that "in every room in any factory or workshop sufficient means of ventilation shall be maintained," and, further, that "the secretary of state may, by special order, prescribe a standard of sufficient ventilation for any class of factories or workshops, and that standard shall be observed in all factories and workshops of that class." A large number of orders have been issued

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under the provisions of this act, which unquestionably have resulted in a very material improvement in the conditions affecting health and industry.

Since the present discussion is limited to dusty trades, the observations and recommendations of the committee with reference to the purity of the atmosphere in factories and workshops otherwise than by the impairment of such purity through dust-generating processes as cause or effect inseparable from the conditions under which work is carried on, are passed over. One very suggestive paragraph from the report with reference to the practical difficulties confronting efforts at adequate ventilation in the case of sedentary occupations is quoted, but the objection on the part of employees to proper ventilation depends sometimes on the absence of proper warming arrangements during cold weather. The committee points out that—

This often leads to further vitiation of the air through the lighting of gas-burners for heating purposes during the day, a wasteful and objectionable plan. The establishment of a legal maximum limit of carbonic acid would probably conduce to the provision and use of proper heating appliances in such cases. We are of opinion that heating arrangements capable of maintaining in case of necessity a temperature at least 25° F. above that of the outside air, in the absence of lights and employees, but along with adequate ventilation, should be provided in all factories and workshops where the occupation is sedentary or involves little muscular exertion, and should be regularly used in the colder weather. In such occupations the temperature should not be less than about 60° F., particularly where the work involves delicate manipulations with the hands.

In the evidence appended to the first report the committee included the results of a scientific examination of the problem of ventilation in clothing factories, tailoring workshops, dressmaking and millinery workshops, boot and shoe workshops, laundries, cabinet and upholstery works, in establishments engaged in the making of bread, confectionery, and articles of food, letterpress printing, bookbinding, the manufacture of stationery and cardboard boxes, engineering and metal trades, file cutting, and the manufacture of the different varieties of textiles. The evidence collected was of a highly scientific and conclusive character, and the methods of inquiry employed are suggestive of the corresponding methods required for the proper determination of the circumstances injurious to health and life in all dusty trades.

In the second report the committee dealt with the application of fans to factory ventilation in connection, more particularly, with the removal of dust, steam, fumes, and other impurities associated with other manufacturing processes, and also with the very important question of the use of respirators by workmen engaged in occupations which can not be successfully subjected to artificial methods of ven-

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tilation and dust removal. The committee discussed at considerable length the highly technical aspects of ventilating engineering, including the selection of fans and the relative utility of low and high pressure fans according to particular circumstances inseparable from the conditions under which given industries are carried on. It considered the volume of air required for different purposes of ventilation and the arrangement of inlets and outlets, fully illustrating its observations by a large number of charts and diagrams which clearly emphasized the strictly scientific manner in which the investigations of the committee were made to secure the practical solution of the problems which confronted them. From the remarks regarding general ventilation some of the more important and suggestive extracts are here quoted:

Certain impurities can hardly be prevented from becoming generally distributed in the air of a room, and can thus only be dealt with by general ventilation of the room. In most cases this is true of the products of respiration and of combustion of gas, the water evaporated in wet processes, and the heat given off from moving or artificially heated machinery, and in some cases of the production of dust. In removing these impurities, or sources of inconvenience, the supply of air must be sufficient for the particular purpose in view. If, for instance, heat or dust has to be removed, the ventilation must be sufficient to effect this removal, and not merely to dilute the products of respiration.

The quantity of air required to remove excessive heat and moisture can not well be calculated in the same way, as the loss of heat through walls and roof is usually not known, and in any case varies with the weather. The air supply must therefore be regulated with the help of thermometers. Air in which the reading by the wet-bulb thermometer exceeds about 70° begins to cause serious inconvenience with ordinary clothing, and this limit ought not to be exceeded in factories or workshops except under exceptional conditions.

Experiments show that if the wet-bulb reading rises beyond about 88° in fairly still air, the body temperature can no longer be prevented from rising seriously even in persons stripped to the waist and doing no work; and with muscular work under the same conditions the body temperature may rise rapidly at a wet-bulb temperature of 80°. With ordinary clothing this effect is considerably greater. At the upper limits it is not the temperature of the air, but that of the wet-bulb thermometer, that matters; and, provided that the air is so dry that the wet-bulb temperature does not exceed the limits specified, air temperatures up to 130° or more can be tolerated without rise of bodily temperature. Much higher wet-bulb temperatures can of course be borne for short periods, but the body temperature soon rises seriously.

In removing steam from rooms it must be borne in mind that cold air is apt to cause condensation of aqueous vapor. Thus if air saturated with moisture at 80° is mixed with even ten times its volume of air from outside at 40° condensation will nevertheless usually occur, and will always do so, whatever the dilution, if the incoming air is saturated with moisture at the outside temperature. If, however, the incoming air be warmed to a moderate extent as it enters,

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this condensation will be prevented, and the ventilation will serve the double object of cooling the room and preventing condensation. If it is only necessary to prevent condensation of vapor and not to remove heat, the object can often be best attained by providing not extra ventilation, but heating arrangements. In the case of dye works, etc., where the building is often filled with steam from the vats, experience shows that the atmosphere is best cleared and condensation avoided by blowing in air heated by passing through a coil or other form of radiator.

As regards removal of dust, the standard of purity aimed at should always be sufficient to prevent injury to health, and should also be such as to prevent inconvenience and enable those employed to be clean when they leave work, after washing, if necessary. Dust from the disintegration of hard stone, steel grinding, etc., is extremely deleterious, and the same may be said of dust containing any poisonous constituent, such as lead. In such cases the dust should, by special means, apart from general ventilation, be entirely prevented from mixing with the general atmosphere of a room; and the same remark applies to all poisonous gases and fumes.

The effect of ventilation on the temperature of a working room during cold weather needs careful regulation. For sedentary work and fine manipulations a temperature of not less than about 60° is required. With lower temperatures the working powers of those present become impaired; and the effects of the low temperature are much increased by drafts. On the other hand, if the work implies active exertion, lower temperatures are permissible; and some kinds of work associated with dust, fumes, etc., can best be performed in sheds open to the air. In general, the more nearly open-air conditions can be attained in any class of work, the better; and, whenever possible, windows should be thrown widely open in summer weather.

Commenting upon the dust problem in particular and its relation to health, it is pointed out in a footnote to the report that it is sometimes difficult to say whether the inhalation of a given variety of dust is definitely injurious. The committee, therefore, held that—

Dust from any hard stone (such as flint, granite, sandstone, etc.) is undoubtedly very injurious to the lungs, producing a marked predisposition to phthisis. On the other hand, coal dust, cement dust, and probably many other varieties of organic and inorganic dust have by no means the same serious effects. During our inquiry many experiments have been made by Professor Ritchie with a view to finding a means of experimentally distinguishing the more injurious from less injurious dusts, but unfortunately no satisfactory results have as yet been reached.

In the discussion of the problem of local ventilation, the committee came to the conclusion that—

Dust, fumes, steam, and other impurities unavoidably given off into the air should, wherever possible, be removed locally, and thus prevented from mixing with the general air of the room. Ventilation with this object in view may be distinguished as "local ventilation." Local ventilation is best carried on by means of exhaust fans, which

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may be of the propeller type if large ducts and low velocities of air will suffice. In many cases, however, centrifugal fans are essential, and usually they are preferable on account of the liability of propeller fans to be interfered with by wind, etc. Fans used for the removal of corrosive fumes should be efficiently protected from their action. The question of possible injury to bearings or other parts by gritty material, and of possible blockage by fibrous material, should also be borne in mind in selecting a fan.

If dust or fumes are allowed to escape in any quantity into the general atmosphere of a room enormous volumes of air are required to remove or dilute them sufficiently. Great discomfort from cold or else great expense in heating are thus entailed, so that it is in every way preferable to remove them by local ventilation. The nearer to their points of production they can be removed the less will be the quantity of air required, and consequently the less will be the discomfort and expense which they cause.

Dusty machines which can not be completely boxed in should, if possible, be provided with an exhaust sufficiently powerful to draw the dust from exposed parts inward through the machine to an exhaust opening. Wheels used in dry grinding, polishing, etc., should, wherever possible, be inclosed and provided with an exhaust from a centrifugal fan capable of giving a current at high velocity around the exposed part of the wheel. The part of the wheel left open should be as small as is consistent with efficient working.

Dusty operations, such as the transference and packing of dry and dusty material, should, if possible, be carried out by mechanical arrangements boxed in so as to prevent the escape of dust, and combined, if necessary, with local exhaust ventilation. This is extremely important where the material contains some poisonous or harmful substance, such as lead, bichromate of potash, powdered flint, etc. Where such arrangements are not possible thoroughly efficient respirators should be used in the case of dangerous material.

For manipulations by hand in which dust, poisonous spray, or objectionable fumes are given off, working places provided each with a separate exhaust opening can often be arranged. The table at which the work is done should have an exhaust opening cut through it or placed behind it and so arranged that the dust arising from the work is drawn away from the mouth of the person working and into a duct placed beneath or behind the table. The provision of a hood, which may be made of glass, so as not to obstruct the light, greatly helps the action of the exhaust, which must be sufficient to actually prevent the dust from reaching the mouth of the worker. Where the dust requires to be collected a settling chamber under the exhaust opening can sometimes be provided.

Of the important and suggestive remarks of the committee regarding matters of technical detail in the installation of local ventilation, mention is made only of those regarding operations in wool sorting and rag sorting. In these occupations the committee thought the best way to manipulate the dusty material was on a flat-wire grating through which air is exhausted from below. It was held that in such a case the rate of flow at every part of the grating must be sufficient

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to draw the dust downward, and that the whole arrangement, including inlet ventilation to the room, must be such that this purpose is effected under all conditions, for it was explained that—

It often occurs that a large dusty machine can not be sufficiently inclosed for the effective application of direct-exhaust ventilation, or that dusty work by hand can not be confined to the immediate neighborhood of an exhaust opening. In these cases air inlets and outlets should be so arranged as to carry off the dust in such a direction as to contaminate as little as possible the air in positions where persons have to be present. The most generally available plan is to have the exhaust openings in the floor around each dusty machine, or as close as possible to whatever the source of the dust may be, and to allow air to enter in an abundant stream from the roof above, warmed if necessary to prevent impact of cold draft on workers. As dust tends naturally to fall to the floor, it is best to remove it downward unless a rapid air current, sufficient to draw it in any direction, is available. If the machine is placed near a wall and no person is required to work between the wall and the machine, the dust may be advantageously exhausted through a fan placed low down in the wall and securely guarded.

In the case of machines which can not be boxed in it will often be found that the dust is produced at some particular point where it is capable of being locally removed. Thus, for illustration, the committee stated that if the dust is produced as the material is passed through rollers, as in the operation performed by a machine known as a spread board in flax spinning, exhaust ventilation applied close to each roller will remove it completely with a minimum of trouble and expense. In continuation of the discussion the committee pointed out that—

With regard to all exhaust openings for extraction of dust, etc., it must be clearly borne in mind that in whatever direction the opening may point the air feed is from all round; hence the radius within which a perceptible draft is produced toward the opening is extremely limited. The air current toward an exhaust opening can not be directed except by cumbrous air guides, whereas the current from an inlet can be directed just like the water issuing from a fireman's hose.

It is held that hitherto hardly any advantage has been taken of the latter fact in connection with the removal of dust and fumes, but the committee was confident that many difficult cases can be successfully dealt with by utilizing the momentum of air issuing from an inlet opening, and if compressed air in small tubes is available, fine jets of it directed across any source of dust and fumes toward a large outlet opening would be decidedly effective. It, therefore, suggested as a plan to test the efficiency of any arrangement for the local removal of dust or fumes the simple method of a piece of smoking brown paper or other material held at the place where the dust or fumes are given off.

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In the case of dust which may not be discharged into the open air on account of the nuisance or damage which it would cause to the surrounding locality and which must, therefore, be separated from the discharged air, the "Cyclone separator" is often extremely effective, and this separator the committee describes by illustrations in the appendix. The invention requires little space and is easily erected at a point either near to or remote from the fan. It was stated, however, that—

The dust may also be separated in a settling chamber, taking the form of a room or an outhouse set apart for the purpose. In this case the addition of steam from a jet will often greatly facilitate the precipitation of light dust. Heavier metallic particles can be blown into a tank of water. A common defect in settling chambers is the neglect to provide a sufficient outlet for the spent air, by which means the whole arrangement for exhausting and settling the dust is rendered ineffective.

As it is evident that the circumstances under which fan ventilation needs to be applied vary greatly in different rooms and different processes of manufacture, we would, in conclusion, take this opportunity of pointing out the necessity of carefully considering the special conditions requiring to be dealt with in each individual case, and the desirability of obtaining competent skilled advice in all cases of doubt, or of employing, in the installation of fan ventilation, only such firms as are known to have at their disposal the requisite knowledge and experience.

Finally, in concluding its extremely valuable report, the committee considered the use of respirators, as follows:

The use of respirators capable of arresting dust is often recommended in connection with factory work as a substitute for efficient removal of dust. Experience has, however, shown that it is extremely difficult to enforce the use of respirators, as they are all more or less uncomfortable and inconvenient, besides being unsightly. It is also very difficult to keep respirators in working order and closely applied to the face. Often enough it is found that most of the air breathed by a person wearing a respirator leaks in between the face and the respirator, and is consequently unfiltered. This is particularly apt to happen after a respirator has been worn sufficiently long for the filtering material to become damp and clogged with moisture. Except, therefore, where dust is definitely dangerous and can not be dealt with by exhaustion, or by using wet processes, or in other ways, we are unable to recommend the use of respirators as an alternative to keeping the air clear of dust.

For the exceptional cases in which it is necessary for men to work in air containing poisonous or otherwise dangerous dust, the mouth and nose may be kept covered by a sheet of fresh cotton wool kept closely applied all round by suitable fastenings passing round the neck. This forms a reliable and efficient respirator, and is commonly used by men who have to perform such work as the removal of arsenic from arsenic flues, or of white lead from lead chambers.

For cases where work has to be done in an atmosphere containing poisonous gases or fumes, a smoke helmet, with air supplied from

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outside through a pipe, may be used. The air supply should be not less than 2 cubic feet per minute and may be provided either from a bellows worked by hand or from a mechanically driven air pump or high-pressure centrifugal fan. A self-contained breathing apparatus, such as is used in mines, is less convenient for factory work and more expensive.

The importance and great practical value of preventive measures in efforts to reduce the health-injurious circumstances of different trades has made it seem advisable to make rather extended abstracts from the admirable and thoroughly scientific report of the committee on ventilation of factories and workshops. The conclusions and recommendations of the committee were, however, anticipated by Sir James Crichton-Browne, who, in his address on The Dust Problem, held that—

In dealing with industrial dust generally the one universal and potent remedy is, of course, ventilation. In contending with certain special kinds of dust special appliances and arrangements are necessary; but for dust, as a whole, our aim should be to intercept and remove it at its point of origin and to insure a bounteous supply of fresh air, and many contrivances for this purpose, more or less efficient, are already in use.

After referring to the then pending report of the departmental committee on the ventilation of factories and workshops, Sir Crichton-Browne summed up his own conclusions in the statement that—

What is wanted is a code of precise instructions to be placed in the hands of a manufacturer who is required to provide fans, indicating the number, pattern, size, speed, and position of the fans which will most effectively and economically secure the desired result, together with directions as to the number and position of openings into the outer air, and also a judgment on the physiological effects of existing respirators and proposals for the construction of one more convenient and trustworthy and less cumbrous than any yet known.

English opinion is decidedly in favor of a clear statement of the scientific principles that should underlie all methods of factory ventilation and dust removal, but so framed in clear and specific language for the guidance of inspectors that the legal requirements can be carried into effect with the least amount of interference with the industrial methods and conditions of the present day. Sir Crichton-Browne also expressed the hope that the report of the departmental committee would offer suggestions to architects for the construction of factories, since many, if not most of the factories now existing, are so built as to render almost impossible a proper system of ventilation, which should have been a primary consideration in their erection. He was confident in his prediction that rational factory legislation, with special reference to ventilation and dust removal,

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would greatly tend to reduce the death rate among many different classes of operatives, improve their health, and augment their productive power. He quoted the evidence of factory inspectors and managers who had testified to the improvement in health and the increased vigor of the workers subsequent to the improved methods of ventilation. One leading manufacturer, replying to inquiries of the inspector of cotton-cloth factories, expressed the opinion that "the effect of improved ventilation on the health of the workers has been good. We have had less staying away through sickness than before we had artificial humidity and ventilation in our sheds. The earnings have been more regular, but we do not find that they have increased as much as we expected; but the effect of the change has been advantageous to the manufacturer, the quality of the work being better and more perfect."

Thus upon both humanitarian and economic grounds the effect of scientific ventilation of factories and workshops, and in particular the effective removal of industrial dust, combine to emphasize the need of more or less radical changes in the conditions as they exist at the present time.

The entire subject of the removal of dust and fumes in factories, with special reference to the health-injurious circumstances of dusty trades, has also been presented in an admirable summary account by J. S. Haldane, M. D., F. R. S., in one of the Shaw lectures on "Industrial hygiene," before the Royal Society of Arts, delivered February 28, 1908. Doctor Haldane was one of the most important members of the departmental committee on the ventilation of factories and workshops, and his views, in part, have already been included in the extended account of the report and recommendations of the committee. The following remarks restating his conclusions as to the causes responsible for more or less health-injurious conditions among factory workers and his recommendations as to the methods most likely to bring about a material improvement in those conditions are important and are quoted from his lecture:

Whether or not any variety of dust is known to cause dangerous effects when habitually inhaled, I think that every kind of dust produced in manufacturing process ought, as far as practicable, to be prevented or removed from the atmosphere in which the work people are present. The reason for this is not only that dusty air is, at the best, unpleasant to breathe, but that when dust is present the clothes, skin, and hair become dirty, untidy, and uncomfortable. This inevitably tends to lower the social status and self-respect of work people if, at any rate, they have to go back to their homes in the same untidy condition. Where dust and dirt can not be avoided the provision of overalls, or of means of washing and changing clothes on leaving work, is extremely desirable.

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Of dusts which are definitely harmful, one very important class is that from the disintegration of hard stone or other material. As instances of this we may take the dust from siliceous or other hard stone, which has to be disintegrated in the mining of gold, tin, lead, and other metals, and the dressing of hard stone, or the ground flint dust used in pottery work, or the dust from dry grinding in the metal trades, or the steel dust produced in file cutting and other work.

In many cases the best way of dealing with dust is to prevent its formation altogether. This can be effected by substituting wet for dry processes, and, fortunately, much of the most dangerous dust can be dealt with in this way—in particular the dust from disintegration of hard stone or steel. Thus the use of a jet of water prevents dust formation in rock-drill and other work in tin and ganister mining, special rules to the effect being now in force. It is to be hoped that in all cases where dust from disintegration of hard stone, fire-clay bricks, and similar material is apt to be inhaled, wet methods will also be adopted where possible. The substitution of wet for dry grinding and for dressing of grindstones is another important step in the right direction, and I have little doubt that in many other dusty processes it would be practicable to use wet methods, though, unfortunately, wet processes are quite out of the question in very many cases.

When dust formation can not be avoided, its escape can sometimes be prevented by entirely boxing in the dusty process. Where the dust is itself the product of the process, as in the grinding or breaking up of material, efficient boxing in is an advantage to the process itself as well as to the persons employed in it.

In most cases it is unfortunately not possible to either prevent the formation of dust or to box in the dusty process completely, and the only method available is to draw the dust by means of an air current. There are certain general principles applicable to the removal of dust in this way. In the first place, the dust ought to be removed at, or as near as possible to, the point of origin. The advantages of this are evident, for by this means the dust is prevented from getting into the general atmosphere of the room and being inhaled by those present, as well as settling everywhere. A far smaller volume of air is also sufficient to remove the dust. This is important, not only from the point of view of expense, but because drafts and cold are also prevented. When dust is permitted to get into the general atmosphere of a factory, enormous volumes of air are required to carry it away, which means that equal volumes have to come in from outside, so that warming or prevention of drafts may be quite impracticable. As a good example of the advantage of removing dust locally I may instance a device for removing the dust produced by rollers in a process preparatory to flax-spinning. The dust produced at the rollers is sucked in by small exhaust openings applied close to the rollers. A quite small air current applied in this way is far more effective than one hundred times as great an air current a few feet off would be.

A second general principle is that the air current from the source of dust to the exhaust opening should, as far as possible, envelop the source of dust, and be of sufficient velocity to carry the dust with it in spite of the ordinary slight drafts existing in the room, or produced by the dusty machine. It is unfortunate that in whatever

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direction an exhaust opening may point, the air entering it is sucked in from all sides. Hence the linear velocity of the draft toward the opening diminishes very rapidly with increasing distance, and at a distance of 2 or 3 feet an exhaust opening, unless very large, will fail to carry off dust efficiently, particularly from a machine which itself causes drafts.

The lecture by Doctor Haldane was fully illustrated to bring its more technical portion within the ready understanding of the layman, and the address should be consulted by all who desire to become thoroughly informed as to the most advanced and qualified opinion regarding the effective and practical removal of dust and fumes in factories and workshops. The remarks and conclusions are decidedly practical, and applicable to American establishments, in which thus far the problem of scientific ventilation and effective dust removal has been almost entirely neglected.

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APPENDIX.

TABLE I.—NUMBER OF MALES EMPLOYED IN VARIOUS OCCUPATIONS IN THE UNITED STATES, 1900, BY AGE GROUPS.

[Computed from report of the Bureau of the Census on Occupations, 1900.]

Occupation.	Number of male employees in each age group.						
	15 years or over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and cutlery makers	26,997	7,258	8,335	5,811	3,261	1,666	666
Gold and silver workers	19,474	6,493	5,443	3,913	2,009	1,139	477
Brass workers	25,557	8,016	8,531	5,188	2,428	1,034	360
Printers, lithographers, and pressmen	136,923	50,669	44,191	24,210	10,993	5,059	1,801
Engravers	10,628	3,227	3,498	2,124	1,020	509	250
Total—Occupations with exposure to metallic dust	219,579	75,663	69,998	41,246	19,711	9,407	3,554
Marble and stone cutters	54,039	8,579	16,566	14,555	9,075	3,766	1,498
Glass workers	44,396	17,882	13,314	7,625	3,838	1,345	392
Potters	12,856	4,536	3,825	2,545	1,259	483	208
Plasterers	35,506	3,971	9,205	8,839	7,791	3,801	1,899
Paper hangers	21,607	5,486	7,077	4,689	2,821	1,122	412
Total—Occupations with exposure to mineral dust	168,404	40,454	49,987	38,253	24,784	10,517	4,409
Cotton-mill operatives	110,953	53,622	28,129	16,031	8,887	3,346	938
Hosiery and knitting mill operatives	11,372	6,350	2,699	1,355	607	250	111
Paper and pulp makers	26,485	8,747	8,445	5,154	2,764	1,042	333
Cabinetmakers	35,435	4,490	7,940	9,044	6,857	4,144	2,960
Total—Occupations with exposure to vegetable fiber dust	184,245	73,209	47,213	31,584	19,115	8,782	4,342
Hat and cap makers	14,948	4,110	4,655	3,415	1,702	768	298
Silk-mill operatives	20,301	9,022	5,301	3,380	1,563	785	250
Woolen-mill operatives	40,768	15,042	10,956	7,446	4,340	2,189	795
Carpet-factory operatives	10,034	3,180	2,654	1,842	1,182	691	485
Upholsterers	28,434	7,394	8,362	6,013	3,745	1,943	977
Total—Occupations with exposure to animal and mixed fiber dust	114,485	38,748	31,928	22,096	12,532	6,376	2,805
All occupied males—Continental United States	22,802,545	5,933,720	5,933,847	4,704,682	3,250,059	1,856,181	1,063,856

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TABLE III.—PER CENT OF MALES EMPLOYED IN EACH AGE GROUP IN VARIOUS OCCUPATIONS IN THE UNITED STATES, 1900.

[Computed from report of the Bureau of the Census on Occupations, 1900.]

Occupation.	Per cent of male employees in each age group.						
	15 years or over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and cutlery makers	100.0	26.9	30.9	21.5	12.1	6.2	2.4
Gold and silver workers	100.0	33.3	28.0	20.1	10.3	5.8	2.5
Brass workers	100.0	31.4	33.4	20.3	9.5	4.0	1.4
Printers, lithographers, and pressmen	100.0	37.0	32.3	17.7	8.0	3.7	1.3
Engravers	100.0	30.4	32.9	20.0	9.6	4.8	2.3
Total—Occupations with exposure to metallic dust	100.0	34.4	31.9	18.8	9.0	4.3	1.6
Marble and stone cutters	100.0	15.9	30.6	26.9	16.8	7.0	2.8
Glass workers	100.0	40.3	30.0	17.2	8.6	3.0	0.9
Potters	100.0	35.3	29.7	19.8	9.8	3.8	1.6
Plasterers	100.0	11.2	25.9	24.9	21.9	10.7	5.4
Paper hangers	100.0	25.4	32.7	21.7	13.1	5.2	1.9
Total—Occupations with exposure to mineral dust	100.0	24.0	29.7	22.7	14.7	6.3	2.6
Cotton-mill operatives	100.0	48.3	25.4	14.5	8.0	3.0	0.8
Hosiery and knitting mill operatives	100.0	55.9	23.7	11.9	5.3	2.2	1.0
Paper and pulp makers	100.0	33.0	31.9	19.5	10.4	3.9	1.3
Cabinetmakers	100.0	12.7	22.4	25.5	19.8	11.7	8.4
Total—Occupations with exposure to vegetable fiber dust	100.0	39.7	25.6	17.1	10.4	4.8	2.4
Hat and cap makers	100.0	27.5	31.1	22.9	11.4	5.1	2.0
Silk-mill operatives	100.0	44.4	26.1	17.7	7.7	3.9	1.2
Woolen-mill operatives	100.0	36.9	26.9	18.3	10.6	5.4	1.9
Carpet-factory operatives	100.0	31.7	26.4	18.4	11.8	6.9	4.8
Upholsterers	100.0	26.0	29.4	21.2	13.2	6.8	3.4
Total—Occupations with exposure to animal and mixed fiber dust	100.0	33.8	27.9	19.3	10.9	5.6	2.5
All occupied males—Continental United States	100.0	26.0	26.3	20.6	14.3	8.1	4.7

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TABLE III.—NUMBER OF DEATHS IN VARIOUS OCCUPATIONS IN THE REGISTRATION STATES OF THE UNITED STATES, 1900, BY AGE GROUPS.

[From report of the Bureau of the Census on Vital Statistics, 1900.]

Occupation.	Number of deaths due to—					
	All causes in each age group.				Consumption at ages 15 years or over.	Other respiratory diseases at ages 15 years or over.
	15 to 24 years.	25 to 44 years.	45 to 64 years.	65 years or over.		
Compositors, printers, and pressmen	94	333	142	89	237	84
Marble and stone cutters	13	143	155	81	142	53
Glass blowers and workers	17	48	29	13	35	10
Plasterers and whitewashers	9	51	54	32	39	25
Total—Occupations with exposure to mineral dust	39	242	238	126	216	88
Cabinetmakers and upholsterers	19	128	135	164	89	63
Hat and cap makers	17	92	74	45	53	33

TABLE IV.—DEATH RATE PER 1,000 IN VARIOUS OCCUPATIONS IN THE REGISTRATION STATES OF THE UNITED STATES, 1900, BY AGE GROUPS.

[From report of the Bureau of the Census on Vital Statistics, 1900.]

Occupation.	Death rate per 1,000 due to—					
	All causes in each age group.				Consumption at ages 15 years or over.	Other respiratory diseases at ages 15 years or over.
	15 to 24 years.	25 to 44 years.	45 to 64 years.	65 years or over.		
Compositors, printers, and pressmen	5.0	12.3	20.0	108.8	4.4	1.6
Marble and stone cutters	3.4	9.3	24.7	122.9	5.4	2.0
Glass blowers and workers	4.6	10.9	21.8	82.3	3.7	1.0
Plasterers and white washers	7.8	10.7	23.5	88.4	4.5	2.9
Total—Occupations with exposure to mineral dust	4.5	9.9	24.0	106.9	4.9	2.0
Cabinetmakers and upholsterers	4.6	10.5	19.8	109.6	3.6	2.6
Hat and cap makers	5.4	13.1	32.9	173.1	4.2	2.6
All occupied males—Registration States	5.1	8.8	19.9	98.4	2.4	2.0

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TABLE V.—NUMBER OF DEATHS FROM ALL CAUSES, FROM CONSUMPTION, AND FROM OTHER RESPIRATORY DISEASES AMONG OCCUPIED MALES IN RHODE ISLAND, COMPARED, 1897 TO 1906.

[From reports of the Rhode Island state board of health.]

Occupation.	Number of deaths due to—				Per cent of deaths due to—		
	All causes.	Consumption.	Other respiratory diseases.	Consumption and other respiratory diseases.	Consumption.	Other respiratory diseases.	Consumption and other respiratory diseases.
Polishers	42	14	20	34	33.3	47.6	80.9
Tool makers	44	9	5	14	20.5	11.4	31.9
Jewelers	557	173	51	224	31.1	9.2	40.3
Brass workers	5	1	.....	1	20.0	.....	20.0
Printers	81	21	15	36	25.9	18.5	44.4
Compositors	12	3	2	5	25.0	16.7	41.7
Pressmen	5	.....	2	2	.....	40.0	40.0
Engravers	45	8	4	12	17.8	8.9	26.7
Total—Occupations with exposure to metallic dust	791	229	99	328	29.0	12.5	41.5
Stone cutters and marble workers	125	40	21	61	32.0	16.8	48.8
Plasterers	25	5	4	9	20.0	16.0	36.0
Paper hangers	14	3	3	6	21.4	21.4	42.8
Molders	157	31	25	56	19.7	15.9	35.6
Total—Occupations with exposure to mineral dust	321	79	53	132	24.6	16.5	41.1
Operatives	798	218	73	291	27.3	9.1	36.4
Spinners	71	18	5	23	25.4	7.0	32.4
Weavers	259	67	30	97	25.9	11.6	37.5
Knitters	8	5	.....	5	62.5	.....	62.5
Cabinetmakers	50	12	9	21	24.0	18.0	42.0
Wood turners and finishers	38	5	10	15	13.2	26.3	39.5
Total—Occupations with exposure to vegetable fiber dust	1,224	325	127	452	26.6	10.4	37.0
Wool sorters	37	5	5	10	13.5	13.5	27.0
Upholsterers	25	6	3	9	24.0	12.0	36.0
Total—Occupations with exposure to animal and mixed fiber dust	62	11	8	19	17.7	12.9	30.6
All occupied males—State of Rhode Island	19,314	3,429	2,420	5,849	17.8	12.5	30.3

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TABLE VII.—YEARS OF LIFE LIVED BY OCCUPIED MALES IN CERTAIN OCCUPATIONS, IN ENGLAND AND WALES DURING THE YEARS 1900 TO 1902, BY AGE GROUPS.(a)

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths and Marriages in England and Wales.]

Occupation.	Years of life lived by males in each age group during 1900 to 1902. (a)						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and instrument makers	17,721	15,942	29,904	24,387	18,522	11,415	5,067
Brass workers	28,815	23,010	33,078	21,420	13,443	6,585	2,256
Printers	56,676	46,080	78,153	48,465	28,542	13,752	4,383
Total—Occupations with exposure to metallic dust	102,612	85,032	141,135	94,272	60,507	31,752	11,706
Glass workers	17,700	11,589	20,166	13,167	9,030	4,374	1,290
Potters	19,455	17,112	29,463	20,043	12,894	6,408	2,055
Paper hangers and whitewashers	19,704	21,786	29,490	27,162	20,181	10,236	3,921
Lithographers	5,163	4,848	8,898	6,066	3,510	1,848	693
Total—Occupations with exposure to mineral dust	62,022	55,335	88,017	66,438	45,615	22,866	7,959
Cotton manufacture	107,298	82,881	135,507	98,739	59,079	27,948	7,965
Hosiery-mill employees	4,989	3,825	8,541	8,049	6,150	4,329	3,807
Lace makers	6,201	4,461	8,790	8,358	4,281	2,703	1,359
Cordage makers	4,095	1,914	3,093	2,820	2,532	2,124	1,332
Paper makers	9,237	6,984	10,749	7,512	5,070	2,691	961
Cabinetmakers	54,741	46,614	72,924	55,869	39,957	22,842	10,194
Wood turners	15,975	13,008	22,161	19,254	15,774	10,806	4,428
Total—Occupations with exposure to vegetable fiber dust	202,536	159,687	261,765	200,601	132,843	73,443	30,066
Furriers	2,151	2,265	4,341	3,795	2,847	1,365	519
Hatters	6,561	6,627	12,981	9,006	6,306	3,225	1,257
Silk workers	4,350	2,751	5,829	5,373	3,798	3,249	2,904
Woolen and worsted mill employees	39,249	30,222	56,322	44,046	33,132	20,268	8,610
Carpet and rug makers	3,114	2,313	4,947	4,134	3,060	1,650	1,002
Total—Occupations with exposure to animal and mixed fiber dust	55,425	44,178	84,420	66,354	49,143	29,757	14,373

a The years of life as used in this table means three times the number of occupied males enumerated at the census of 1901.

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TABLE VIII.—MORTALITY DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Deaths due to all causes in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and instrument makers	37	53	189	333	481	480	510
Brass workers	64	118	194	274	281	241	189
Printers	179	278	505	494	507	423	384
Total—Occupations with exposure to metallic dust	280	449	888	1,101	1,269	1,144	1,083
Glass workers	57	59	136	173	218	183	154
Potters	51	63	155	291	408	347	243
Paper hangers and whitewashers	30	75	120	313	387	333	283
Lithographers	8	26	50	51	70	57	57
Total—Occupations with exposure to mineral dust	146	223	461	828	1,083	920	737
Cotton manufacture	288	358	742	949	1,209	1,150	1,014
Hosiery-mill employees	5	22	46	54	99	152	503
Lace makers	16	12	59	70	50	88	119
Cordage makers	9	11	20	21	33	69	141
Paper makers	32	28	54	50	56	71	93
Cabinetmakers	143	174	379	550	693	700	846
Wood turners	31	58	138	225	394	375	411
Total—Occupations with exposure to vegetable fiber dust	524	663	1,438	1,919	2,534	2,605	3,127
Furriers	8	10	37	49	57	70	55
Hatters	19	41	87	103	125	116	130
Silk workers	10	9	24	46	68	117	322
Woolen and worsted mill employees	86	152	292	392	568	752	1,110
Carpet and rug makers	9	12	29	39	56	56	117
Total—Occupations with exposure to animal and mixed fiber dust	132	224	409	629	874	1,111	1,734

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TABLE VIII.—MORTALITY DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Deaths due to consumption in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and instrument makers	3	25	88	144	132	60	10
Brass workers	14	50	97	97	62	17	1
Printers	58	157	285	235	122	47	7
Total—Occupations with exposure to metallic dust	75	232	470	476	316	124	18
Glass workers	10	21	58	60	44	13	.....
Potters	12	23	59	76	92	28	2
Paper hangers and whitewashers	8	23	36	108	73	41	6
Lithographers	4	13	24	19	15	8	1
Total—Occupations with exposure to mineral dust	34	80	177	263	224	90	9
Cotton manufacture	88	137	273	285	216	77	17
Hosiery-mill employees	3	9	21	20	26	15	3
Lace makers	7	5	25	20	11	6	1
Cordage makers	1	4	8	7	3	8	2
Paper makers	5	9	21	16	9	5	1
Cabinetmakers	38	77	159	212	153	62	19
Wood turners	10	20	64	73	87	32	6
Total—Occupations with exposure to vegetable fiber dust	152	261	571	633	505	205	49
Furriers	.....	4	15	18	11	10	3
Hatters	4	23	48	37	30	7	.....
Silk workers	1	5	14	11	15	12	6
Woolen and worsted mill employees	27	72	102	99	94	46	16
Carpet and rug makers	2	6	7	13	9	4	1
Total—Occupations with exposure to animal and mixed fiber dust	34	110	186	178	159	79	26

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TABLE IX.—MORTALITY DUE TO OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Deaths due to other respiratory diseases in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and instrument makers	4	9	34	49	100	119	129
Brass workers	7	12	20	44	53	62	43
Printers	20	17	43	60	62	71	91
Total—Occupations with exposure to metallic dust	31	38	97	153	215	252	263
Glass workers	5	7	20	32	52	47	37
Potters	9	10	19	66	139	148	72
Paper hangers and whitewashers	3	10	23	37	79	91	67
Lithographers	.....	1	7	6	6	8	19
Total—Occupations with exposure to mineral dust	17	28	69	141	276	294	195
Cotton manufacture	27	50	110	149	247	274	227
Hosiery-mill employees	1	1	6	6	18	26	103
Lace makers	.....	2	3	4	7	21	24
Cordage makers	.....	3	3	2	8	19	39
Paper makers	3	3	7	9	14	13	16
Cabinetmakers	17	20	47	72	118	166	183
Wood turners	5	8	16	51	68	93	110
Total—Occupations with exposure to vegetable fiber dust	53	87	192	293	480	612	702
Furriers	2	3	4	9	5	16	8
Hatters	.....	2	10	12	31	35	30
Silk workers	3	.....	.....	7	9	12	75
Woolen and worsted mill employees	12	7	42	64	102	131	219
Carpet and rug makers	1	1	5	4	7	15	29
Total—Occupations with exposure to animal and mixed fiber dust	18	13	61	96	154	209	361

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TABLE X.—DEATH RATE PER 1,000 DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Death rate per 1,000 due to all causes in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and instrument makers	2.69	3.32	6.32	13.65	25.97	42.05	100.65
Brass workers	2.22	5.13	5.86	12.79	20.90	36.60	83.78
Printers	3.19	6.03	6.46	10.19	17.76	30.76	87.61
Total—Occupations with exposure to metallic dust	2.73	5.28	6.29	11.68	20.97	36.03	92.52
Glass workers	3.22	5.09	6.74	13.14	24.14	41.84	119.38
Potters	2.62	3.68	5.26	14.52	31.64	54.15	118.25
Paper hangers and whitewashers	1.52	3.44	4.07	11.52	19.18	32.53	72.18
Lithographers	1.55	5.36	5.62	8.41	19.94	30.84	82.25
Total—Occupations with exposure to mineral dust	2.35	4.02	5.24	12.46	23.74	40.23	92.00
Cotton manufacture	2.68	4.32	5.48	9.61	20.46	41.15	127.31
Hosiery-mill employees	1.00	5.75	5.39	6.71	16.10	35.11	132.12
Lace makers	2.58	2.69	6.71	8.38	11.68	32.56	87.56
Cordage makers	2.20	5.75	6.47	7.45	13.03	32.49	105.86
Paper makers	3.46	4.01	5.02	6.66	11.05	26.38	94.80
Cabinetmakers	2.61	3.73	5.20	9.84	17.34	30.65	82.99
Wood turners	1.94	4.46	6.23	11.69	24.98	34.70	92.82
Total—Occupations with exposure to vegetable fiber dust	2.59	4.15	5.49	9.57	19.08	35.47	104.00
Furriers	3.72	4.42	8.52	12.91	20.02	51.28	107.84
Hatters	2.90	6.19	6.70	11.44	19.82	35.97	108.42
Silk workers	2.30	3.27	4.12	8.56	17.90	36.01	107.55
Woolen and worsted mill employees	2.19	5.03	5.18	8.90	17.14	37.10	128.92
Carpet and rug makers	2.89	5.19	5.86	9.43	18.30	33.94	116.77
Total—Occupations with exposure to animal and mixed fiber dust	2.38	5.07	5.56	9.48	17.78	37.32	120.64
All occupied males—England and Wales	2.44	4.41	6.01	10.22	17.73	31.01	88.39

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TABLE XII.—DEATH RATE PER 1,000 DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Death rate per 1,000 due to consumption in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and instrument makers	0.17	1.57	2.94	5.90	7.13	5.26	1.97
Brass workers	.49	2.17	2.93	4.53	4.61	2.58	.44
Printers	1.03	3.41	3.65	4.85	4.27	3.42	1.69
Total—Occupations with exposure to metallic dust	.73	2.73	3.33	5.05	5.22	3.91	1.54
Glass workers	.56	1.81	2.88	4.56	4.87	2.97	.....
Potters	.62	1.34	2.00	3.79	7.14	4.37	.97
Paper hangers and whitewashers	.41	1.06	1.22	3.98	3.62	4.01	1.53
Lithographers	.77	2.68	2.70	3.13	4.27	4.33	1.44
Total—Occupations with exposure to mineral dust	.55	1.44	2.01	3.96	4.91	3.94	1.13
Cotton manufacture	.82	1.65	2.01	2.89	3.66	2.76	2.13
Hosiery-mill employees	.60	2.35	2.46	2.48	4.23	3.47	.79
Lace makers	1.13	1.12	2.84	2.39	2.57	2.22	.74
Cordage makers	.24	2.09	2.59	2.48	1.18	3.77	1.50
Paper makers	.54	1.29	1.95	2.13	1.78	1.86	1.02
Cabinetmakers	.69	1.65	2.18	3.79	3.83	2.71	1.86
Wood turners	.63	1.54	2.89	3.79	5.52	2.96	1.36
Total—Occupations with exposure to vegetable fiber dust	.75	1.63	2.18	3.16	3.80	2.79	1.63
Furriers	.....	1.77	3.46	4.74	3.88	7.33	5.88
Hatters	.61	2.47	3.70	4.11	4.76	2.17	.....
Silk workers	.23	1.82	2.40	2.05	3.95	3.69	2.00
Woolen and worsted mill employees	.69	2.38	1.81	2.25	2.84	2.27	1.86
Carpet and rug makers	.64	2.59	1.41	3.14	2.94	2.42	1.00
Total—Occupations with exposure to animal and mixed fiber dust	.61	2.49	2.20	2.68	3.24	2.65	1.81
All occupied males—England and Wales	.54	1.55	2.03	2.74	3.04	2.16	1.11

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TABLE XII.—DEATH RATE PER 1,000 DUE TO OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Death rate per 1,000 due to other respiratory diseases in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Tool and instrument makers	0.23	0.56	1.14	2.01	5.40	10.42	25.46
Brass workers	.24	.52	.60	2.05	3.94	9.42	19.06
Printers	.36	.37	.55	1.24	2.17	5.16	20.76
Total—Occupations with exposure to metallic dust	.30	.45	.69	1.62	3.55	7.94	22.46
Glass workers	.28	.60	.99	2.43	5.76	10.75	28.68
Potters	.46	.58	.64	3.29	10.78	23.10	35.04
Paper hangers and whitewashers	.15	.46	.78	1.36	3.91	8.89	17.09
Lithographers	.....	.21	.79	.99	1.71	4.33	27.42
Total—Occupations with exposure to mineral dust	.27	.50	78	2.12	6.05	12.86	24.50
Cotton manufacture	.25	.60	.81	1.51	4.18	9.80	28.50
Hosiery-mill employees	.20	.26	.70	.75	2.93	6.01	27.06
Lace makers	.....	.45	.34	.48	1.64	7.77	17.66
Cordage makers	.....	1.57	.97	.71	3.16	8.95	29.28
Paper makers	.32	.43	.65	1.20	2.76	4.83	16.31
Cabinetmakers	.31	.43	.64	1.29	2.95	7.27	17.95
Wood turners	.31	.62	.72	2.65	4.31	8.61	24.84
Total—Occupations with exposure to vegetable fiber dust	.26	.54	.73	1.46	3.61	8.33	23.35
Furriers	.93	1.32	.92	2.37	1.76	11.72	15.69
Hatters	.....	.30	.77	1.33	4.92	10.85	23.87
Silk workers	.69	.....	.....	1.30	2.37	3.69	25.05
Woolen and worsted mill employees	.31	.23	.75	1.45	3.08	6.46	25.44
Carpet and rug makers	.32	.43	1.01	.97	2.29	9.09	28.94
Total—Occupations with exposure to animal and mixed fiber dust	.32	.29	.72	1.45	3.13	7.02	25.12
All occupied males—England and Wales	.24	.48	.77	1.66	3.32	6.54	17.77

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TABLE XIII.—DEATHS DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN THE UNITED STATES, 1897 TO 1906, BY AGE GROUPS.

[From the experience of an industrial insurance company.]

Occupation.	Deaths due to all causes in each age group.						
	15 years or over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Grinders	128	7	24	38	30	20	9
Polishers	279	48	75	68	48	19	21
Tool and instrument makers	303	40	59	68	56	32	48
Jewelers	403	60	74	50	59	77	83
Gold-leaf makers	25	2	8	4	3	2	6
Brass workers	414	66	112	91	58	54	33
Printers	1,590	344	439	346	211	142	108
Compositors	168	21	54	32	19	33	9
Engravers	192	31	47	42	34	19	19
Total—Occupations with exposure to metallic dust	3,502	619	892	739	518	398	336
Stone workers	858	21	114	172	232	199	120
Marble workers	200	3	30	40	46	50	31
Glass blowers	282	24	78	59	55	26	40
Glass cutters	116	26	30	27	20	8	5
Potters	384	46	68	84	78	72	36
Cement workers	88	10	12	19	15	19	13
Plasterers	577	25	78	107	127	121	119
Paper hangers	319	33	96	74	55	34	27
Foundrymen and molders	1,397	122	228	300	292	239	216
Core makers	162	66	42	25	9	9	11
Lithographers	160	37	45	29	21	18	10
Total—Occupations with exposure to mineral dust	4,543	413	821	936	950	795	628
Spinners	189	28	38	36	27	37	23
Weavers	915	108	174	155	144	137	197
Hosiery and knitting mill employees	65	23	22	7	9	3	1
Rope makers	109	12	18	17	18	24	20
Paper makers	115	13	28	18	15	23	18
Cabinetmakers	817	39	61	82	136	197	302
Wood turners	127	10	8	17	24	33	35
Wood carvers	123	11	20	23	31	21	17
Total—Occupations with exposure to vegetable fiber dust	2,460	244	369	355	404	475	613
Furriers and taxidermists	105	3	18	30	13	24	17
Hatters	832	78	175	185	127	135	132
Silk-mill employees	295	32	61	55	31	37	29
Woolen and worsted mill employees	106	20	16	14	19	24	13
Carpet and rug makers	155	17	22	17	24	34	41
Upholsterers	381	39	65	79	73	62	63
Mattress makers	41	9	7	11	5	8	1
Total—Occupations with exposure to animal and mixed fiber dust	1,915	248	364	391	292	324	296

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TABLE XIV.—DEATHS DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN THE UNITED STATES, 1897 TO 1906, BY AGE GROUPS.

[From the experience of an industrial insurance company.]

Occupation.	Deaths due to consumption in each age group.						
	15 years or over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Grinders	63	4	17	24	12	5	1
Polishers	108	22	42	29	11	4	.....
Tool and instrument makers	101	13	35	24	21	4	4
Jewelers	113	24	44	22	13	7	3
Gold-leaf makers	7	1	4	2	.....	.....	.....
Brass workers	161	39	56	41	14	11	.....
Printers	613	167	247	140	42	13	4
Compositors	59	6	36	12	3	1	1
Engravers	67	12	29	19	5	2	.....
Total—Occupations with exposure to metallic dust	1,292	288	510	313	121	47	13
Stone workers	302	10	60	82	91	52	7
Marble workers	56	.....	15	16	16	7	2
Glass blowers	85	11	44	15	11	1	3
Glass cutters	40	7	14	11	5	1	2
Potters	127	11	36	37	22	14	7
Cement workers	17	1	3	4	6	3	.....
Plasterers	136	7	35	38	35	16	5
Paper hangers	107	14	47	33	8	4	1
Foundrymen and molders	311	29	92	82	65	27	16
Core makers	48	20	17	9	1	1	.....
Lithographers	70	21	28	13	5	3	.....
Total—Occupations with exposure to mineral dust	1,299	131	391	340	265	129	43
Spinners	56	13	19	16	7	1	.....
Weavers	254	43	93	59	37	15	7
Hosiery and knitting mill employees	24	5	15	2	2	.....	.....
Rope makers	28	6	9	7	6	.....	.....
Paper makers	34	6	15	7	2	3	1
Cabinetmakers	162	14	34	40	31	29	14
Wood turners	25	7	5	3	4	5	1
Wood carvers	27	3	9	9	5	1	.....
Total—Occupations with exposure to vegetable fiber dust	610	97	199	143	94	54	23
Furriers and taxidermists	34	1	7	19	4	2	1
Hatters	278	42	97	84	34	20	1
Silk-mill employees	106	28	32	33	7	4	2
Woolen and worsted mill employees	26	7	7	5	4	3	.....
Carpet and rug makers	37	9	10	6	5	4	3
Upholsterers	118	15	38	38	18	3	6
Mattress makers	16	4	3	4	2	3	.....
Total—Occupations with exposure to animal and mixed fiber dust	615	106	194	189	74	39	13

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TABLE XV.—PER CENT OF DEATHS DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS, 1897 TO 1906, BY AGE GROUPS.

[From the experience of an industrial insurance company.]

Occupation.	Per cent of deaths due to consumption in each age group.						
	15 years or over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years or over.
Grinders	49.2	57.1	70.8	63.2	40.0	25.0	11.1
Polishers	38.7	45.8	56.0	42.6	22.9	21.1	.....
Tool and instrument makers	33.3	32.5	59.3	35.3	37.5	12.5	8.3
Jewelers	28.0	40.0	59.5	44.0	22.0	9.1	3.6
Gold-leaf makers	28.0	50.0	50.0	50.0	.....	.....	.....
Brass workers	38.9	59.1	50.0	45.1	24.1	20.4	.....
Printers	38.6	48.6	56.3	40.5	19.9	9.2	3.7
Compositors	35.1	28.6	66.7	37.5	15.8	3.0	11.1
Engravers	34.9	38.7	61.7	45.2	14.7	10.5	.....
Total—Occupations with exposure to metallic dust	36.9	46.5	57.2	42.4	23.4	11.8	3.9
Stone workers	35.2	47.6	52.6	47.7	39.2	26.1	5.8
Marble workers	28.0	.....	50.0	40.0	34.8	14.0	6.5
Glass blowers	30.1	45.8	56.4	25.4	20.0	3.8	7.5
Glass cutters	34.5	26.9	46.7	40.7	25.0	12.5	40.0
Potters	33.1	23.9	52.9	44.0	28.2	19.4	19.4
Cement workers	19.3	10.0	25.0	21.1	40.0	15.8	.....
Plasterers	23.6	28.0	44.9	35.5	27.6	13.2	4.2
Paper hangers	33.5	42.4	49.0	44.6	14.5	11.8	3.7
Foundrymen and molders	22.3	23.8	40.4	27.3	22.3	11.3	7.4
Core makers	29.6	30.3	40.5	36.0	11.1	11.1	.....
Lithographers	43.8	56.8	62.2	44.8	23.8	16.7	.....
Total—Occupations with exposure to mineral dust	28.6	31.7	47.6	36.3	27.9	16.2	6.8
Spinners	29.6	46.4	50.0	44.4	25.9	2.7	.....
Weavers	27.8	39.8	53.4	38.1	25.7	10.9	3.6
Hosiery and knitting mill employees	36.9	21.7	68.2	28.6	22.2	.....	.....
Rope makers	25.7	50.0	50.0	41.2	33.3	.....	.....
Paper makers	29.6	46.2	53.6	38.9	13.3	13.0	5.6
Cabinetmakers	19.8	35.9	55.7	48.8	22.8	14.7	4.6
Wood turners	19.7	70.0	62.5	17.6	16.7	15.2	2.9
Wood carvers	22.0	27.3	45.0	39.1	16.1	4.8	.....
Total—Occupations with exposure to vegetable fiber dust	24.8	39.8	53.9	40.3	23.3	11.4	3.8
Furriers and taxidermists	32.4	33.3	38.9	63.3	30.8	8.3	5.9
Hatters	33.4	53.8	55.4	45.4	26.7	14.8	0.8
Silkmill employees	35.9	34.1	52.5	60.0	22.6	10.8	6.9
Woolen and worsted mill employees	24.5	35.0	43.8	35.7	21.1	12.5	.....
Carpet and rug makers	23.9	52.9	45.5	35.3	20.8	11.8	7.3
Upholsterers	31.0	38.5	58.5	48.1	24.7	4.8	9.5
Mattress makers	39.0	44.4	42.9	36.4	40.0	37.5	.....
Total—Occupations with exposure to animal and mixed fiber dust	32.1	42.7	53.3	48.3	25.3	12.0	4.4

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TABLE XVI.—NUMBER AND PER CENT OF DEATHS DUE TO OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS, 1897 TO 1906.

[From the experience of an industrial insurance company.]

Occupation.	Deaths due to respiratory diseases other than consumption.									
	Number due to—					Per cent of deaths from all causes.				
	All respiratory diseases.	Asthma.	Bronchitis.	Pneumonia.	Other respiratory diseases.	All respiratory diseases.	Asthma.	Bronchitis.	Pneumonia.	Other respiratory diseases.
Grinders	22	3	2	15	2	17.2	2.3	1.6	11.7	1.6
Polishers	35	2	3	25	5	12.6	.7	1.1	9.0	1.8
Tool and instrument makers	39	4	5	25	5	12.9	1.3	1.7	8.2	1.7
Jewelers	49	2	8	37	2	12.2	.5	2.0	9.2	.5
Gold leaf makers	5	.....	.....	3	2	20.0	.....	.....	12.0	8.0
Brass workers	51	2	1	36	12	12.3	.5	.2	8.7	2.9
Printers	221	9	19	169	24	13.9	.6	1.2	10.6	1.5
Compositors	25	1	.....	19	5	14.9	.6	.....	11.3	3.0
Engravers	22	1	.....	18	3	11.5	.5	.....	9.4	1.6
Total — Occupations with exposure to metallic dust	469	24	38	347	60	13.4	.7	1.1	9.9	1.7
Stone workers	162	13	30	95	24	18.9	1.5	3.5	11.1	2.8
Marble workers	36	3	4	26	3	18.0	1.5	2.0	13.0	1.5
Glass blowers	26	1	2	17	6	9.2	.4	.7	6.0	2.1
Glass cutters	15	1	.....	12	2	12.9	.9	.....	10.3	1.7
Potters	57	18	12	21	6	14.9	4.7	3.1	5.5	1.6
Cement workers	8	1	1	5	1	9.0	1.1	1.1	5.7	1.1
Plasterers	93	5	14	67	7	16.1	.9	2.4	11.6	1.2
Paper hangers	38	.....	3	30	5	11.9	.....	.9	9.4	1.6
Foundrymen and molders	277	14	21	211	31	19.8	1.0	1.5	15.1	2.2
Core makers	28	.....	1	24	3	17.3	.....	.6	14.8	1.9
Lithographers	22	.....	3	18	1	13.8	.....	1.9	11.3	.6
Total — Occupations with exposure to mineral dust	762	56	91	526	89	16.8	1.2	2.0	11.6	2.0
Spinners	28	4	2	17	5	14.8	2.1	1.1	9.0	2.6
Weavers	119	10	18	78	13	13.0	1.1	2.0	8.5	1.4
Hosiery and knitting mill employees	3	.....	.....	1	2	4.6	.....	.....	1.5	3.1
Rope makers	9	1	2	6	.....	8.2	.9	1.8	5.5	.....
Paper makers	10	.....	1	9	.....	8.7	.....	.9	7.8	.....
Cabinetmakers	120	14	14	75	17	14.7	1.7	1.7	9.2	2.1
Wood turners	21	3	2	11	5	16.5	2.4	1.6	8.6	3.9
Wood carvers	16	2	2	9	3	13.0	1.6	1.6	7.3	2.5
Total — Occupations with exposure to vegetable fiber dust	326	34	41	206	45	13.3	1.4	1.7	8.4	1.8
Furriers and taxidermists	17	.....	5	9	3	16.2	.....	4.8	8.6	2.8
Hatters	97	4	12	71	10	11.7	.5	1.5	8.5	1.2
Silk-mill employees	33	2	3	21	7	11.2	.7	1.0	7.1	2.4
Woolen and worsted mill employees	17	5	2	8	2	16.0	4.7	1.9	7.5	1.9
Carpet and rug makers	26	3	3	16	4	16.7	1.9	1.9	10.3	2.6
Upholsterers	46	3	2	33	8	12.1	.8	.5	8.7	2.1
Mattress makers	6	.....	.....	6	.....	14.6	.....	.....	14.6	.....
Total — Occupations with exposure to animal and mixed fiber dust	242	17	27	164	34	12.7	.9	1.4	8.6	1.8

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TABLE XVIII.—DEATHS DUE TO ALL CAUSES, TO CONSUMPTION, AND TO OTHER RESPIRATORY DISEASES AMONG MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[From reports of the Bureau of the Census on Mortality.]

Age at death.	Deaths due to all causes.	Deaths due to consumption.		Deaths due to other respiratory diseases.	
		Number.	Per cent of deaths due to all causes.	Number.	Per cent of deaths due to all causes.
15 to 24 years	134,700	37,495	27.8	13,010	9.7
25 to 34 years	186,530	58,424	31.3	20,298	10.9
35 to 44 years	205,930	48,500	23.6	25,655	12.5
45 to 54 years	205,497	30,781	15.0	25,869	12.6
55 to 64 years	218,151	17,707	8.1	26,575	12.2
65 years or over	435,228	11,949	2.7	50,603	11.6
Total	1,386,036	204,856	14.8	162,010	11.7

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CHARITY RELIEF AND WAGE EARNINGS.

BY S. E. FORMAN.

INTRODUCTION.

This article is a study of the relief given by the Associated Charities in the city of Washington, D. C., in 1905. The investigation deals with the cases of several thousand persons who sought relief at the door of charity. The aim of the study is to determine the relation which exists between the charity relief and the earnings of the recipients, and to discover to what extent this distress was due to low wages or to a lack of employment, and to what extent other causes figured in the distress.

The result of the study will be better understood if consideration is first given to the aims and methods of the Associated Charities. Those aims and methods have been recently formulated as follows:

1. To bring about the adequate treatment of each needy individual or family upon the basis of an adequate understanding of the needs and resources.

2. To promote cooperation between all the philanthropic forces, the public and private charities, the churches, municipal authorities, and benevolent individuals of the community, in order that the efficiency of all may be increased and each enabled to do its own best work in its own best way.

3. To obtain and administer material aid where necessary, endeavoring to secure the assistance from appropriate organizations and individuals, and not to interfere with or unnecessarily decrease in any case the responsibility of agencies or persons from whom the relief should be derived.

4. To enlist, organize, and direct volunteer workers, including division conference members, friendly visitors, savings collectors, conductors of outing parties, office assistants, and helpers in other lines.

5. To prevent pauperism and dependence, to discourage begging and the giving of alms without adequate investigation, to expose deliberate imposture or fraud, to not merely palliate distress but to relieve it permanently, and in every case to develop all the possibilities of self-help.

6. To improve home life, develop character, and elevate the standards of life, to prevent children from growing up as paupers, and to aid needy families in securing for ruptured and deformed children such treatment as will prevent permanent disabilities and dependence.

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7. To aid in the diffusion of knowledge as to conditions of life in neglected neighborhoods or among needy families and as to the best methods of philanthropic work. To suggest, stimulate, inaugurate, or undertake such efforts for remedial, preventive, or constructive social service as shall from time to time seem wise.

8. To maintain a careful, thorough system of confidential records so that all the essential knowledge obtained regarding needy families may be immediately available, in confidence, for the guidance of persons having a legitimate charitable interest.

9. To exclude from every department of its work all questions as to sectarian religious belief, politics, or nationality, and to allow no representative of the association to use his or her position for the purpose of proselytism.

From the above official statement it will be seen that an office of the Associated Charities is not primarily a relief station. It is rather a clearing house where various charitable influences are so coordinated and directed that overlapping, waste, and fraud are either wholly prevented or reduced to a minimum. Relief of some kind is given to almost every family that applies to the Associated Charities, but it is not always material relief—such as money, food, or clothing. The chief object of the association is to enable the applicant to help himself. "Every case is studied carefully, unnecessary relief is refused, employment is secured, the good influence of relatives, employers, and other natural helpers is enlisted, and every possibility of self-help is as far as possible discovered and emphasized."(a) Such a policy reduces the giving of material aid to the lowest point. Of the 4,377 families dealt with in the charity year ending June 30, 1906, only 1,050 were given material relief. After such a sifting process a family is not likely to receive material aid unless there is actual distress.

A phase of the society's work that is of great interest is its system of gathering and recording all pertinent facts relating to the family applying for aid. This inquiry begins when application for assistance is made. The investigation is informal and unobtrusive, but thorough and painstaking. Information about the family is sought from the most direct sources. Letters of applicants and the representations of proxies may set in motion an investigation, but they will not suffice to place the family upon the roll of recipients. A personal inspection of home conditions by the charity agent must be made before the merits or demerits of an application are passed upon. In cases of emergency or when the work of the office is heavy this rule is not always strictly followed. At such times the giving of aid may precede the investigation; but the general policy and the habitual

[a] Annual Report of the Associated Charities of the District of Columbia, 1906, p. 6.

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practice of the society is to furnish aid only in the light of the fullest knowledge possible.

The investigation into the merits of an application usually begins in the charity office. When a request is made that aid be given to a family, if the person asking for aid is not a member of the family, or is a child, the agent probably will not entertain the request at all, but will demand that a responsible member of the family come to the office. If the wife or husband or grown child comes and makes known the needs of the family, the agent in a conversational way draws from the applicant everything about the family that may have a bearing upon the subject in hand. Inquiry is made as to the size of the family, the ages of the children, the conjugal conditions that prevail, the occupations of the members of the family, the wages received, the names of employers and friends, and church affiliations. Having noted these and other relevant facts, the agent, withholding aid for the time being, promises to visit the home of the applicant at the earliest possible moment. Only in rare instances does the first interview result in the immediate giving of doles. As soon as it can be arranged the agent goes to the home of the applicant, where the inquiry is continued far beyond the point to which it was carried at the office and until sufficient information is obtained regarding the family to make it possible to deal with the case intelligently.

The facts brought out by the investigation are arranged in order, typewritten, and placed in a large envelope which becomes the receptacle for the charity record of the family and for all documents bearing upon that record. In this envelope are found letters applying for aid, letters expressing thanks for aid received, letters from friends and relatives of the family, letters of recommendation, correspondence of charity officials, newspaper clippings containing information about the family, ejectment notices, evidences of chattel-mortgage transactions, and notes of promise. Every item throwing light upon the charity side of the family's history is carefully preserved. In the majority of cases the record is brief and the contents of the envelope are small, but in many cases where the charity record extends over many years the contents of the envelope, if printed, would make a good-sized volume.

The conclusions of this article are based upon a study of 19,000 envelopes found in the 8 charity offices of the city of Washington. Every envelope containing a record of material relief, such as money, food, clothing, or shelter given in 1905 has been examined. The work has been conducted in the charity offices, and in numerous cases when there was perplexity or doubt the writer has been assisted by the charity agents.

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NUMBER, NATIVITY, AND SIZE OF THE FAMILIES.

In dealing with charity cases the efforts of the organization are directed toward the family regarded as a social unit. Likewise in studying these charity cases the family has been regarded as a unit, but strictly as an economic rather than as a domestic unit. A man living alone in a shanty or in a single room has been regarded as constituting a family of one, even though he has children living. Where a husband is serving a term in jail and the wife is left to take care of herself and several children, the family is regarded as consisting of the wife and children, and the husband is not included in the enumeration. In dealing with the subjects of delinquencies and of causes, however, it has often been found necessary to look outside the economic group.

Of the 1,256 families for which the records showed that material relief was given in 1905, 73 have not been considered in this article. In a number of cases it was impossible to determine the composition of the family in 1905. In such cases the record extended over a number of years, but the changes that came with the years were not fully recorded. In other cases, because of a rush of applications, aid was given without any investigation at all. In a few instances the records were too meager to serve the purposes of this study. There remained for consideration the charity records of 1,183 families, 452 of these being white families and 731 colored.

The nativity of the recipients is shown in the following table. It is seen that nearly all who were assisted were Americans. Only 40 families, or 3.4 per cent of the total, were of wholly foreign extraction. This element is so small as to be without special significance, yet it is noticeable that whereas the foreign population of the city is about 7 per cent of the total population foreign charity recipients constitute a percentage only about half as great. When the number of white families is compared with the number of Negro families it is found that the former comprise 38.2 per cent and the latter 61.8 per cent of all the families receiving aid. In 1900 the white population of the District was 68.7 per cent and the Negro population was 31.1 per cent of the whole population.

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NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905, BY NATIVITY OF HEAD OF FAMILY.

Nativity of—		Number of families.	Nativity of—		Number of families.
Husband or male head of family.	Wife or female head of family.		Husband or male head of family.	Wife or female head of family.	
WHITE.			WHITE—conc'd.		
United States	United States	[a]236	Poland	Poland	1
United States		[b]20	Russia		[c]1
	United States	[c]142	Scotland		[d]1
United States	England	1	Turkey	United States	[g]1
United States	Germany	2		England	[h]2
United States	Ireland	2		France	[i]1
United States	Italy	1		Germany	[j]4
United States	Scotland	1		Ireland	[k]3
United States	Sweden	1		(l)	[m]2
Austria	Austria	1			
Denmark	Denmark	1	Total white		452
Denmark	Sweden	1			
England	Germany	2	NEGRO.		
England	Ireland	1			
France	France	2	United States	United States	293
France		[d]1	United States		[n]45
Germany	United States	2		United States	[o]380
Germany	Germany	7		Bahama Islands	[p]1
Germany	Poland	1		Germany	[p]1
Hungary		[c]1	West Indies	United States	1
Ireland	United States	4			
Ireland	Ireland	3	Total Negro		731
Italy	Italy	1			
Italy		[f]1	Grand total		1,183
Norway	United States	1			

[a] Including 2 families in which the husband is white and the wife colored.
[b] Comprising 4 widowers, 13 single men, 2 separated men, and 1 man conjugal condition not reported.
[c] Comprising 83 widows, 34 separated women, 17 single women, 2 divorced women, 5 married women whose husbands were not at home, and 1 woman conjugal condition not reported.
[d] Widower.
[e] Single man.
[f] Separated man.
[g] Wife a Negress.
[h] Comprising 1 widow and 1 woman whose husband was in jail.
[i] Separated woman.
[j] Comprising 2 widows and 2 separated women.
[k] Single women.
[l] Nativity not reported.
[m] Comprising 1 widow and 1 separated woman.
[n] Comprising 24 widowers, 5 men conjugal condition not reported, 4 separated men, 10 single men, and 2 married men whose wives were not at home.
[o] Comprising 215 widows, 90 separated women, 64 single women, 13 married women whose husbands were not at home, 2 divorced women, and 6 women conjugal condition not reported.
[p] Widow.

The number of persons in the 1,183 families receiving material aid from the Associated Charities in 1905 was 4,365. Of these 1,860 were white persons and 2,505 were colored persons. If the 73 families which were eliminated on account of imperfect records had been included the total number of persons would have approximated 5,000. The number receiving material aid, however, by no means fully measures the work of the organization in Washington. In addition there are thousands who are assisted by the organization but who do not actually receive money, food, or clothing. A very large number of applicants desire free medical treatment, and this they receive at

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public dispensaries upon the recommendation of the charity agents. A great many seek employment and the charity agents find work for them. Some who seek material aid are shown a way by which they may help themselves and thus avoid being enrolled as objects of charity. It is probable, taking the official reports of the association as a guide in making an estimate, that 15,000 persons per annum are affected in one way or another by the work of this organization.

The 4,365 recipients of material aid, it should be clearly understood, are for the most part the floating, unattached poor. In a very true sense they are the derelicts of society. The ties that morally bind the individual to society have been in a large degree severed. They rarely belong to a union or to a lodge; they have no friends or relatives to whom they can turn for help; they have no church connections. Industrially and socially they are without moorings, and when the hour of distress overtakes them they drift to the charity office, because they have nowhere else to go.

The isolation of this class of charity recipients is brought out when the subject of the membership of the wage-earners in labor organizations and in fraternal and beneficial associations is considered. The records are not entirely satisfactory, though efforts are made to secure as much information as possible about the lodges and societies to which the applicants belong. In nineteen cases out of twenty there is nothing to learn. Of 1,775 wage-earners only 81 made any statement as to whether they belonged to labor organizations, and of these only 23 stated that they were members of such organizations. In only 40 families was there evidence of membership in fraternal or beneficial societies. The reason for not belonging to labor organizations and the result of nonmembership appear frequently in notes and comments of the agent like the following:

"He (the wage-earner) does not belong to the union, and for that reason finds it difficult to get work."

"The husband said he thought X could get him work to do if he (X) cared to do so, but the husband does not belong to a union and X does." (Here X was the father-in-law of the applicant.)

"Man (a carpenter) had gone to a job of work but when the other workmen found he was a nonunion man, they objected. Man made inquiry about union and found he would have to pay $10 to join. This he could not do."

In the table which follows is shown the size of the families receiving relief. The average is 3.7 persons for each family. In 1900 the average size of the family in the District of Columbia was 4.9 persons. The charity family is therefore considerably smaller than the normal family. The lower average of the charity family is due to the fact that among the very poor there is an unusually large num-

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ber of families consisting of but one or two persons. The father or the mother, or both father and mother, either childless or forsaken by their children, live alone until old age comes on and the earnings become so scant that resort must be made to charity. The table shows that nearly 40 per cent of the families receiving aid were families of one or two persons. In the District of Columbia in 1900 not quite 20 per cent of the whole number of families belonged to this class. If the families consisting of one and of two persons are excluded, the average number of persons in the charity family is increased to 5, which is about normal. The figures bearing upon the size of the family, therefore, contain nothing of great significance. The poverty-stricken family on the average is about the same size as the prosperous family.

NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905, BY SIZE OF FAMILY.

Size of family.	White.		Negro.		Total.	
	Families.	Persons.	Families.	Persons.	Families.	Persons.
One person	67	67	156	156	223	223
Two persons	71	[a] 142	145	[b] 290	216	432
Three persons	56	[c] 168	139	[d] 417	195	585
Four persons	72	288	88	352	160	640
Five persons	56	[c] 280	67	[d] 335	123	615
Six persons	58	348	67	402	125	750
Seven persons	34	238	29	203	63	441
Eight persons	22	176	23	184	45	60
Nine persons	8	72	9	81	17	353
Ten persons	7	70	6	60	13	130
Eleven persons	1	11	1	11	2	122
Fourteen persons	.....	.....	1	14	1	14
Total	452	[e] 1,860	731	[f] 2,505	1,183	4,365

[a] Including 1 Negro, member of white family.
[b] Not including 1 Negro, member of white family.
[c] Including 4 Negroes, members of white families.
[d] Not including 4 Negroes, members of white families.
[e] Including 9 Negroes, members of white families.
[f] Not including 9 Negroes, members of white families.

AGE AND CONJUGAL CONDITION.

The following table shows the leading facts in respect to the ages of the charity recipients and to the conjugal conditions which prevailed among them. When collecting facts with respect to age the charity agent meets with the same difficulties that perplex the census agent. The ages, particularly of children, are often not known and ages of very old people must frequently be guessed. Still, taken all in all, the age records, especially those of children, are full and fairly satisfactory.

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NUMBER OF WHITE AND OF NEGRO PERSONS OF EACH SEX RECEIVING AID IN 1905, BY CONJUGAL CONDITION AND AGE PERIODS.

Conjugal condition and age period.	White.			Negro.			Total.		
	Male.	Female.	Sex not reported.	Male.	Female.	Sex not reported.	Male.	Female.	Sex not reported.
Single:									
Under 10 years	253	267	76	291	365	95	544	632	171
10 or under 16 years	162	162	11	159	229	12	321	391	23
16 years or over	91	93	1	98	187	.....	189	280	1
Age not reported	10	10	8	13	35	9	23	45	17
Total	516	532	96	561	816	116	1,077	1,348	212
Married:									
16 years or over	274	281	.....	302	316	.....	576	597	.....
Separated (deserted):									
16 years or over	3	39	.....	4	97	.....	7	136	.....
Age not reported	.....	.....	.....	.....	1	.....	.....	1	.....
Total	3	39	.....	4	98	.....	7	137	.....
Widowed:									
16 years or over	7	102	.....	26	236	.....	33	338	.....
Age not reported	.....	.....	.....	.....	2	.....	.....	2	.....
Total	7	102	.....	26	238	.....	33	340	.....
Divorced:									
16 years or over	1	3	.....	.....	2	.....	1	5	.....
Conjugal condition not reported:									
16 years or over	3	3	.....	7	10	.....	10	13	.....
Age not reported	.....	.....	.....	1	2	6	1	2	6
Total	3	3	.....	8	12	6	11	15	6
Grand total	804	960	96	901	1,482	122	1,705	2,442	218

An analysis of the age periods brings out the fact that there is a much larger percentage of children under the age of 16 in the charity population than there is in the population at large. In 1900, 26.6 per cent of the entire population of the District of Columbia was under the age of 16, while in the charity population studied 47.7 per cent was under the age of 16. Analysis further shows that the percentage of children under 10 years of age was 30.9 per cent in the charity families, while the percentage of children under 10 in the entire District was only 16.8 per cent of the total population. Young children, therefore, are relatively very numerous among charity dependents in the District of Columbia, a fact of considerable significance. In families where there are many small children much of the time and energy that might be given to breadwinning is of necessity given to the care of the children. In some of the families a care taker—usually an old woman who could do nothing else—was provided for the children and all the older persons were thus permitted to go out and earn something.

Not only do children under 10 years of age predominate in these families, but the female children are proportionally more numerous

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than they are in the average family. In 1900 in the District of Columbia the number of males under 16 years of age was 36,517, and the number of females 37,683, the excess of females over males being 3.2 per cent. A comparison of the figures given in the preceding table shows that the females under 16 years of age are in excess of the males by 18.3 per cent. If comparison is made only for the children of 10 or under 16 years it is found that in the District the excess of females over males is 8.1 per cent, whereas in the charity population the excess is 21.8 per cent. In whatever way they are considered the figures point to a large proportion of girls in the charity families. In so far, then, as the boy is a better wage-earner than the girl, so far this excess of female children must be regarded as a handicap in the struggle for subsistence. Not the actual number of children in these families, but the sex of the children is significant.

In respect to the conjugal conditions prevailing among these charity recipients the table gives information regarding separation (desertion), widowhood, and divorce. It is seen that in the 1,183 families there were 144 deserted persons. In 137 of these cases the wife was reported as having been deserted and in 7 cases the husband was deserted. If only those cases are considered in which abandonment was possible, that is, those in which both husband and wife were living, this matter of desertion may be brought out more plainly. There were in all 736 families in which both husband and wife were living, and in these, as above stated, there were 144 cases of desertion, or 19.6 per cent. Among the Negroes desertion was much more frequent than among the whites. In the 322 white families which had both husband and wife living there were 42 cases of desertion, or 13.0 per cent; in the 414 Negro families of this class there were 102 cases of desertion, or 24.4 per cent.

The number of families in which either the husband or the wife was dead is also strikingly large, nearly 30 per cent of all the families belonging to this class. Of the 452 white families receiving aid 6 had widowers and 89 had widows at the head. Of the 731 colored families 24 had widowers and 218 had widows at the head. In these families there were 923 persons, 256 whites and 667 colored.

The figures show that the charity family is very often the fatherless family. There were 307 families in which the husband was dead. Including with these the 137 families that were abandoned by the husband it is found that 444 families, or 37.5 per cent of the total, were without male supporters at their head.

Divorce among the charity families played practically no part at all, there being only 6 divorced people among 4,365. This paucity of divorce cases is easily explained. The very poor can not afford divorcement. Separation is the cheap substitute for divorce.

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OCCUPATIONS.

A study of the occupations of the charity recipients shows that they are by no means an idle or nonwage-earning class. Of the 2,186 persons reported as being 16 years of age or over, 1,687, or 77.2 per cent, were engaged in some kind of gainful occupation. Of those over 16 who had no gainful occupation the greater part consisted of old people and of women who as wives spent their time in housework. The number of families in which both husband and wife were gainfully employed was very large. Of the 271 white families in which there were both a husband and a wife living at home there were 95 in which both the husband and wife were gainfully employed, while of the 291 colored families having both husband and wife living at home there were 222 in which both the husband and the wife were gainfully employed. In respect to the employment of married women the broad facts of the charity world resemble the broad facts of the world at large. The white married woman does not expect to work as a wage-earner, while marriage has little effect in reducing the number of Negro women at work. Extreme poverty, however, drives many white married women into the ranks of wage-earners, for the percentage of white wives with occupations in the charity families is much greater than the percentage of white married women gainfully employed in the District at large.

Among the children of the charity recipients 88, or 12 per cent, of those 10 or under 16 years of age were gainfully employed. In 1900 of 27,319 children in the District of Columbia from 10 to 15 years of age, 2,144, or 7.8 per cent, were reported as engaged in gainful occupations.[a] Thus child labor among the charity recipients is seen to be a considerably greater factor than it is among the people at large. But the statements of the charity records bearing on this topic do not tell the whole story. They show merely the number of children who were employed for a definite wage, whereas hundreds of children in the families receiving charity helped their mothers to do the washing and ironing which was so often the chief source of income; these have not been included in the enumeration here given, yet plainly they were engaged in gainful occupations.

The occupations of the chief wage-earners and of other wage-earners in the families receiving charity relief and the number of persons engaged in each occupation are shown in the two tables which follow:

[a] See Bulletin of the Bureau of the Census, No. 68, p. 5.

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NUMBER OF CHIEF WAGE-EARNERS IN WHITE AND IN NEGRO FAMILIES RECEIVING AID IN 1905, BY OCCUPATION, SEX, AND REGULARITY OF EMPLOYMENT AT NORMAL TIMES.

Occupation and sex.	White.				Negro.				Total.			
	Regular.	Irregular.	Regularity not reported.	Total.	Regular.	Irregular.	Regularity not reported.	Total.	Regular.	Irregular.	Regularity not reported.	Total.
MALES.												
Art critic		1		1						1		1
Artists		2		2						2		2
Ash man					1			1	1			1
Bakers	1	2		3					1	2		3
Barbers					1	2	1	4	1	2	1	4
Blacksmiths		1		1	1			1	1	1		2
Boatmen	1	1		2					1	1		2
Bookkeeper	1			1					1			1
Brewers	1	1		2					1	1		2
Bricklayers		5		5		2		2		7		7
Butchers		2		2						2		2
Carpenters		26		26		1		1		27		27
Caterer						1		1		1		1
Cement worker							1	1			1	1
Cigar maker		1		1						1		1
Chair caner						1		1		1		1
Clergymen		1		1		2		2		3		3
Clerks	6	2	1	9					6	2	1	9
Clothing cleaners		1		1		1		1		2		2
Compositors		5		5						5		5
Conductors	2			2					2			2
Cooks		1		1	3	4		7	3	5		8
Coopers		2		2						2		2
Electrician		1		1						1		1
Engineers		3		3	1	1		2	1	4		5
Expressmen	1	1		2		5		5	1	6		7
Foreman of laborers						1		1		1		1
Gardeners		1		1		1		1		2		2
Government clerk		1		1						1		1
Government employee	1			1					1			1
Herb doctor		1		1						1		1
Hod carriers						8	1	9		8	1	9
Horse trader		1		1						1		1
Hostlers					1	1		2	1	1		2
Hucksters		12		12		2		2		14		14
Inspectors of lumber		1	1	2						1	1	2
Ironworkers	1	6		7					1	6		7
Janitors	2			2	2	1	1	4	4	1	1	6
Jobbers		3	1	4		7		7		10	1	11
Junk dealers						6		6		6		6
Laborers	13	83	1	97	16	183	7	206	29	266	8	303
Machinists		2		2						2		2
Marble worker		1		1						1		1
Mechanic		1		1						1		1
Merchants		2		2						2		2
Metal worker		1		1						1		1
Missionary						1		1		1		1
Motormen	5			5					5			5
Musicians						2		2		2		2
Newspaper work		1		1						1		1
Oyster shucker	1			1					1			1
Painters	1	23	1	25					1	23	1	25
Paper hangers		3		3		1		1		4		4
Peddlers		1		1		1		1		2		2
Physicians		1	1	2						1	1	2
Plasterers		5		5		5		5		10		10
Plumbers		4		4						4		4
Rag pickers						2		2		2		2
Railroad employee	1			1					1			1
Sailors		2		2						2		2
Salesman		1		1						1		1
Sawyer	1			1					1			1
Scullion						1		1		1		1
Sexton					1			1	1			1
Shoemakers		2		2		3		3		5		5
Steam fitter		1		1						1		1
Stonebreaker						1		1		1		1
Stonecutters		2		2						2		2
Stone mason	1			1					1			1

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NUMBER OF CHIEF WAGE-EARNERS IN WHITE AND IN NEGRO FAMILIES RECEIVING AID IN 1905—Concluded.

Occupation and sex.	White.				Negro.				Total.			
	Regular.	Irregular.	Regularity not reported.	Total.	Regular.	Irregular.	Regularity not reported.	Total.	Regular.	Irregular.	Regularity not reported.	Total.
MALES—concluded.												
Street sweeper	.....	.....	1	1	.....	.....	.....	.....	.....	.....	1	1
Tailors	.....	1	1	2	.....	.....	.....	.....	.....	1	1	2
Teamsters	4	7	.....	11	9	18	2	29	13	25	2	40
Tinsmiths	.....	5	.....	5	.....	.....	.....	.....	.....	5	.....	5
Traveling salesman	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	1
Typewriter	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	1
Waiters	.....	1	.....	1	2	6	.....	8	2	7	.....	9
Watchmen	4	3	1	8	.....	.....	.....	.....	4	3	1	8
Occupation not reported	1	1	4	6	.....	1	4	5	1	2	8	11
Total males	49	241	13	303	38	272	17	327	87	513	30	630
FEMALES.												
Boarding-house keeper	.....	.....	.....	.....	.....	1	.....	1	.....	1	.....	1
Canvasser	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	1
Cash girl	1	.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
Caterer	.....	.....	.....	.....	.....	.....	1	1	.....	.....	1	1
Charwomen	5	3	.....	8	1	.....	.....	1	6	3	.....	9
Clerks	1	1	1	3	.....	.....	.....	.....	1	1	1	3
Cooks	.....	.....	1	1	.....	1	.....	1	.....	1	1	2
Domestics	4	[a]34	.....	38	11	[b]156	6	173	15	190	6	211
Dressmaker	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	1
Factory operators	1	.....	.....	1	1	.....	.....	1	2	.....	.....	2
Folder, printing office	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	1
Laborer	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	1
Laundresses	1	15	.....	16	13	134	6	153	14	149	6	169
Milliner	1	.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
Nurses	.....	5	.....	5	.....	5	.....	5	.....	10	.....	10
Seamstresses	4	33	.....	37	.....	11	.....	11	4	44	.....	48
Telephone girl	.....	.....	1	1	.....	.....	.....	.....	.....	.....	1	1
Waitresses	1	1	.....	2	.....	.....	.....	.....	1	1	.....	2
Occupation not reported	.....	.....	1	1	.....	2	5	7	.....	2	6	8
Total females	19	[a]96	4	119	26	[b]310	18	354	45	406	22	473
Total, both sexes	68	[a]337	17	422	64	[b]582	35	681	132	919	52	1,103
Families for which no chief wage-earner was reported	.....	.....	.....	30	.....	.....	.....	50	.....	.....	.....	80
Total families	.....	.....	.....	452	.....	.....	.....	731	.....	.....	.....	1,183

[a] Including 1 Negro woman, chief wage-earner in a white family.
[b] Not including 1 Negro woman, chief wage-earner in a white family.

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NUMBER OF WAGE-EARNERS OTHER THAN CHIEF WAGE-EARNERS IN WHITE AND IN NEGRO FAMILIES RECEIVING AID IN 1905, BY SEX AND OCCUPATION.

Occupation.	White.	Negro.	Total.	Occupation.	White.	Negro.	Total.
MALES.				FEMALES.			
Apprentice	1		1	Agent	1		1
Attendants at club	2		2	Art work	1		1
Barber		1	1	Bookkeeper	1		1
Bather's helper		1	1	Bundle wrapper	1		1
Bootblack		1	1	Canvassers	2		2
Chair caner		1	1	Charwoman	1		1
Clerks	8	1	9	Clerks	14		14
Domestics		2	2	Domestics	[a] 56	[b] 166	222
Driver		1	1	Dressmaker	1		1
Dyer and cleaner		1	1	Errand girl	1		1
Errand boys	8		8	Factory operatives	2		2
Jobbing	13	26	39	Governess	1		1
Laborers	19	19	38	Government employee	1		1
Messengers	5	2	7	Jobbing	3		3
Musician		1	1	Laundresses	26	139	165
Naval employee	1		1	Messenger	1		1
Newsboys	4	5	9	Musician		1	1
Painters	2		2	Nurses	3	7	10
Painter's apprentice	1		1	Paper-mill operatives	1	1	2
Plumber's apprentice	1		1	Rents rooms	1		1
Porter		1	1	Seamstresses	32	7	39
Teamsters	3	12	15	Stenographer	1		1
Not reported	6	9	15	Telephone operators	2		2
				Waitresses	2		2
Total males	74	84	158	Not reported	13	25	38
				Total females	168	346	514
				Grand total	[a] 242	[b] 430	672

[a] Including 2 Negroes, members of white families.
[b] Not including 2 Negroes, members of white families.

These occupations represent almost every ordinary vocation. In the same list with laborers and domestics are art critics, musicians, physicians, missionaries, newspaper men, and clergymen. A couple, who in their younger days had kept at their own expense what was known as a "Tramps' Rest," where penniless wayfarers might receive food, raiment, and shelter, were in their old age compelled to become the objects of charity.

Although the list of occupations is long the distress was confined to a very few classes of people. The occupations of more than 60 per cent of the chief wage-earners were those of laborers, laundresses, and domestics, while among others than chief wage-earners these three classes formed 64 per cent of the whole. This was a result to be expected, for Washington on its industrial side is above all places a city of laborers, laundresses, and domestics.(a) While this is true the table shows a number of charity recipients from the organized and well-paid trades. Twenty-seven carpenters, 25 painters, 10 plasterers, 9 clerks, 7 ironworkers, 5 shoemakers, and 4 plumbers were chief wage-earners in families that were driven to charity.

EARNINGS OF CHARITY RECIPIENTS.

The subject of the earnings of charity recipients is one of the most important connected with the subject of poverty and at the same time one of the most difficult to treat satisfactorily. When a family

[a] See Bulletin of the Bureau of Labor, No. 67, pp. 782–784.

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applies for aid the earnings are inquired into at the outset. The inquiry as to the amount and source of income is painstaking and thorough, for aid must be given or withheld on the basis of the family income; yet the facts obtained by the inquiry are in most cases such as can not be conveniently tabulated. The period of charity seeking is a period when earnings are either irregular or abnormally low or when there are no earnings at all.

The following table gives the number of families in which the earnings of the chief breadwinner were normal at the time of the first application in 1905, the number in which the earnings were less than normal, and the number in which the chief wage-earner was earning nothing at all:

NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905 IN WHICH THE EARNINGS OF THE CHIEF WAGE-EARNER WERE NORMAL, LESS THAN NORMAL, OR NOTHING, BY SEX OF CHIEF WAGE-EARNER.

[This table does not include 80 families for which no chief wage-earner was reported.]

Earnings.	White families in which chief wage-earner was—		Negro families in which chief wage-earner was—		All families in which chief wage-earner was—		Total families reporting chief wage-earners.
	Male.	Female.	Male.	Female.	Male.	Female.	
Normal	24	14	17	23	41	37	78
Less than normal	1	1	1	3	2	4	6
Nothing	243	76	260	220	503	296	799
Not reported	35	[a] 28	48	[b] 109	83	137	220
Total	303	[a] 119	326	[b] 355	629	474	1,103

[a] Including 1 Negro woman, chief wage-earner in a white family.
[b] Not including 1 Negro woman, chief wage-earner in a white family.

The above table shows 220 cases as not reported. This does not mean that the records in these cases give no facts at all bearing upon the earnings of the chief wage-earner. It means that while the records give some kind of an account of the earnings they do not state their exact amount. For example, the record may say that the husband, a laborer, was at work with a construction company, but may say nothing whatever about the amount of his earnings. In this case it was certain that there were earnings, but it could not be determined whether they were normal or less than normal. Such a case, therefore, had to be classified in the tables "not reported."

The most significant item in the table is the one showing the number of families in which the chief wage-earner at the time of application was earning nothing. In more than two-thirds of the families the wages of the chief wage-earner had entirely ceased. If the 80 families in which there was no chief wage-earner at all are included, the proportion of families deprived of a regular breadwinner at the time of application was three-fourths of the whole number of families relieved. In the majority of cases distress was contemporaneous with the cessation of the earnings of the chief breadwinner, a fact which indicates prima facie, at least, that the

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poverty of these poor is not chiefly a moral problem, but is chiefly an economic or financial problem.

The rates of wages of the 78 chief wage-earners whose wages at the time of application were normal are shown in the following table. This table, like all tables which give merely the rates of wages, shows very little about the living conditions of these families. It is not the wages that a person earns in a day or in a week, or even in a month, that throws light upon living conditions. In order to determine standards of living from earnings it is necessary to ascertain the earnings for a long period of time. An examination of the table produces at least one result, although a negative one; it causes little or no surprise that these families should have applied for charity even though the earnings at the time of application were flowing in regularly.

CHIEF WAGE-EARNERS PAID BY THE DAY, BY THE WEEK, AND BY THE MONTH, WHOSE EARNINGS WERE NORMAL AT THE TIME OF APPLICATION, BY REGULARITY OF EMPLOYMENT AND SIZE OF FAMILY.

Normal earnings.	Chief wage-earners.				Persons in family.
	Employment, regular.		Employment, irregular.		
	Male.	Female.	Male.	Female.	
WHITE.					
$0.20 per day		1			4
$1.00 per day	1				7
$1.00 per day			1		11
$1.50 per day	1				6
$1.50 per day	1				9
$1.65 per day	1				9
$2.00 per day	1				6
$1.25 per week		1			1
$1.35 per week		1			1
$2.00 per week		1			6
$2.50 per week		1			2
$3.00 per week	2				2
$3.00 per week		1			3
$3.00 per week	[a] 1				5
$3.50 per week		1			5
$4.00 per week		1			4
$4.00 per week	1				5
$4.00 per week	1				6
$5.00 per week	1				2
$5.00 per week	1				6
$5.00 per week			1		7
$5.25 per week	1				3
$6.50 per week	1				5
$9.00 per week		1			5
$9.00 per week	1				6
$9.00 per week	1				7
$9.00 per week	1				8
$10.00 per month			1		3
$15.00 per month	1				5
$20.00 per month		1			3
$20.00 per month		1			4
$25.00 per month		1			4
$25.00 per month		1			7
$30.00 per month [b]				1	4
$40.00 per month	1				10
$55.00 per month	1				6
$75.00 per month	1				6
Total	21	13	3	1	

Normal earnings.	Chief wage-earners.				Persons in family.
	Employment, regular.		Employment, irregular.		
	Male.	Female.	Male.	Female.	
NEGRO.					
$1.00 per day	1				5
$1.25 per day	1				5
$1.50 per day	1				6
$1.75 per day	[a] 1				2
$2.00 per day	1				3
$0.50 per week				1	2
$0.75 per week		1			4
$1.25 per week				1	4
$1.25 per week		1			5
$1.50 per week		[a] 1			3
$1.50 per week				1	5
$1.50 per week			1		8
$1.75 per week		1			4
$2.00 per week				1	2
$2.00 per week		2			4
$2.00 per week		[a] 1			8
$2.50 per week		1			4
$2.50 per week				1	5
$2.75 per week		1			5
$3.00 per week				1	3
$3.00 per week				1	4
$3.00 per week	1				5
$3.00 per week		1			7
$4.00 per week	1				5
$4.00 per week	1				8
$5.00 per week	[a] 1				7
$6.00 per week	1				6
$7.50 per week	1				5
$7.50 per week	1				9
$8.00 per week			1		10
$9.00 per week				1	3
$9.00 per week	1				7
$2.00 per month				1	4
$10.00 per month		1			5
$12.00 per month		[a] 1			2
$12.00 per month		2			3
$20.00 per month	1				4
$40.00 per month	1				8
Total	15	14	2	9	

[a] Not reported whether regular or irregular.

[b] $18.00 at time of application.

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In the following table are shown the normal daily earnings of the chief wage-earner in those families where the normal rate of wage was in some form or other stated in the record, whether the normal rate was received at time of application or not. This table, like the one preceding it, fails to give a picture of the 269 families to which it relates. Before any comparison can be made, it is necessary to know how much money each family received in a year. Nevertheless the table has one feature that is worthy of notice. In over two-fifths of these families the chief wage-earner was a male working at a normal wage ranging from $1 to $2 per day, the wage most often not exceeding $1.50 a day. Nearly all of these wage-earners were day laborers—men with the pick and shovel. Some of them were working for the city, digging the sewers and mains, and sweeping the streets.

NORMAL DAILY EARNINGS OF CHIEF WAGE-EARNERS, BY SEX AND SIZE OF FAMILY.

Chief wage-earners in—				Persons in family.	Earnings per day. (a)	Chief wage-earners in—				Persons in family.	Earnings per day. (a)
White families.		Negro families.				White families.		Negro families.			
Male.	Female.	Male.	Female.			Male.	Female.	Male.	Female.		
.....	.....	.....	1	1	$0.08	2	.....	.....	2	2	$0.50
.....	.....	.....	1	2	.08	.....	2	.....	1	3	.50
.....	.....	.....	1	4	.08	.....	1	.....	5	4	.50
.....	.....	.....	1	4	.13	1	.....	1	1	5	.50
.....	.....	.....	1	1	.19	.....	.....	.....	1	7	.50
.....	1	.....	.....	4	.20	.....	.....	1	.....	2	.58
.....	1	.....	.....	1	.21	2	1	.....	.....	5	.58
.....	.....	.....	1	3	.21	.....	.....	1	1	6	.58
.....	.....	.....	1	4	.21	.....	.....	1	.....	3	.60
.....	.....	.....	1	5	.21	.....	.....	2	.....	6	.62
.....	1	.....	.....	1	.23	.....	1	.....	.....	3	.63
.....	.....	.....	1	1	.25	.....	.....	1	.....	1	.67
.....	.....	.....	1	2	.25	1	1	1	.....	2	.67
.....	.....	.....	3	3	.25	.....	1	.....	.....	3	.67
.....	.....	.....	1	4	.25	.....	1	.....	.....	4	.67
.....	.....	.....	1	5	.25	1	.....	1	.....	5	.67
.....	.....	.....	1	3	.29	1	.....	.....	.....	6	.67
.....	.....	.....	1	4	.29	.....	.....	1	.....	7	.67
.....	.....	.....	1	6	.29	.....	.....	1	.....	8	.67
.....	.....	1	.....	2	.31	.....	.....	1	.....	8	[b].67
.....	.....	.....	1	4	.31	.....	.....	.....	1	3	.75
.....	1	.....	.....	1	.33	.....	.....	1	.....	4	.75
.....	1	.....	1	2	.33	.....	1	.....	.....	3	.77
.....	.....	.....	1	3	.33	1	2	1	.....	4	.77
.....	.....	.....	3	4	.33	1	.....	.....	.....	2	.83
.....	2	.....	.....	6	.33	1	.....	.....	.....	3	.83
.....	.....	.....	1	8	.33	.....	.....	.....	1	4	.83
.....	.....	.....	1	3	.35	1	.....	.....	.....	5	.83
.....	1	.....	1	2	.38	1	.....	.....	.....	6	.83
1	.....	.....	2	3	.38	1	.....	1	.....	7	.83
.....	.....	.....	3	5	.38	1	.....	.....	.....	8	.83
.....	.....	.....	2	1	.42	1	.....	.....	.....	3	.88
.....	1	.....	1	2	.42	.....	1	.....	.....	4	.96
.....	.....	.....	1	3	.42	.....	1	.....	.....	7	.96
.....	.....	.....	1	4	.42	.....	1	3	.....	2	1.00
.....	.....	.....	1	5	.42	1	.....	1	.....	3	1.00
.....	.....	.....	2	2	.46	2	.....	2	.....	4	1.00
.....	.....	.....	2	3	.46	.....	.....	4	.....	5	1.00
.....	.....	.....	1	5	.46	.....	.....	3	.....	6	1.00
.....	.....	.....	1	6	.46	1	1	.....	.....	7	1.00

[a] Earnings per day shown in this column are computed in some cases by dividing weekly earnings by 6 and in other cases by dividing monthly earnings by 26.
[b] And board.

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NORMAL DAILY EARNINGS OF CHIEF WAGE-EARNERS, BY SEX AND SIZE OF FAMILY—Concluded.

Chief wage-earners in—				Persons in family.	Earnings per day. (a)	Chief wage-earners in—				Persons in family.	Earnings per day. (a)
White families.		Negro families.				White families.		Negro families.			
Male.	Female.	Male.	Female.			Male.	Female.	Male.	Female.		
.....	.....	1	.....	2	$1.08	.....	.....	3	.....	2	$1.75
1	.....	.....	.....	5	1.08	1	.....	.....	.....	3	1.75
.....	.....	1	.....	5	1.10	.....	.....	1	.....	7	1.75
.....	1	.....	.....	4	1.15	1	.....	.....	.....	6	1.83
1	.....	.....	.....	5	1.15	1	.....	.....	.....	7	1.85
.....	.....	1	.....	6	1.16	1	.....	.....	.....	6	1.92
1	1	1	.....	5	1.17	.....	.....	1	.....	2	2.00
1	.....	.....	.....	6	1.17	1	.....	1	.....	3	2.00
1	.....	.....	.....	2	1.25	2	.....	.....	.....	5	2.00
.....	.....	1	.....	3	1.25	2	.....	1	.....	6	2.00
1	.....	.....	.....	4	1.25	1	.....	.....	.....	7	2.00
2	.....	3	.....	5	1.25	2	.....	1	.....	8	2.00
.....	.....	1	.....	6	1.25	1	.....	.....	.....	6	2.12
1	.....	1	.....	7	1.25	1	.....	.....	.....	7	2.31
1	.....	.....	.....	8	1.25	1	.....	.....	.....	10	2.31
.....	.....	1	.....	9	1.25	3	.....	.....	.....	2	2.50
1	.....	.....	.....	3	1.33	1	.....	.....	.....	4	2.50
.....	1	.....	.....	5	1.33	1	.....	.....	.....	5	2.50
.....	.....	1	.....	10	1.33	3	.....	1	.....	6	2.50
.....	.....	1	.....	3	1.35	.....	.....	1	.....	8	2.50
.....	.....	1	.....	4	1.35	1	.....	.....	.....	5	2.75
1	.....	.....	.....	1	1.50	1	.....	.....	.....	6	2.88
.....	.....	2	.....	2	1.50	2	.....	.....	.....	4	3.00
1	.....	3	.....	3	1.50	1	.....	.....	.....	5	3.00
5	.....	5	.....	4	1.50	1	.....	.....	.....	6	3.00
3	1	2	.....	5	1.50	1	.....	.....	.....	8	3.00
5	.....	3	1	6	1.50	.....	.....	1	.....	11	3.00
4	.....	2	.....	7	1.50	1	.....	.....	.....	3	3.20
3	.....	2	.....	8	1.50	1	.....	.....	.....	4	3.50
1	.....	1	.....	9	1.50	1	.....	.....	.....	5	3.50
.....	.....	3	.....	10	1.50	1	.....	.....	.....	2	4.00
1	.....	.....	.....	8	1.52	1	.....	.....	.....	4	4.00
1	.....	.....	.....	2	1.54	1	.....	.....	.....	5	4.00
.....	.....	1	.....	8	1.54	1	.....	.....	.....	6	4.00
1	.....	.....	.....	10	1.54	1	.....	.....	.....	7	4.00
1	.....	.....	.....	9	1.65	1	.....	.....	.....	4	4.17
1	.....	.....	.....	2	1.67	1	.....	.....	.....	4	5.00
1	.....	.....	.....	4	1.67	1	.....	.....	.....	5	5.00
1	.....	.....	.....	5	1.67	1	.....	.....	.....	10	5.00
1	.....	.....	.....	9	1.67						

(a) Earnings per day shown in this column are computed in some cases by dividing weekly earnings by 6 and in other cases by dividing monthly earnings by 26.

In 206 of the families there was evidence of a normal income additional to that derived from the labor of wage-earners. In many cases the reports told of assistance given by neighbors, in other cases the family could rely upon regular donations from a church, occasionally an absent child or a near relative would regularly pay the rent; upon the whole, however, assistance by relatives and kinsmen was rare—not so frequent perhaps as assistance by friends. In 43 families a monthly pension supplemented the regular earnings. These pensions ranged from $8 to $12 a month and were in a few cases practically the sole income of the recipient. With the exception of the pensions the element of additional income constituted but an insignificant factor in the finances of the families. In a great majority of cases when the regular earnings of members of the family were cut off practically everything was gone.

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FAMILIES HAVING ADDITIONAL INCOME (OR HELP), AT NORMAL TIMES AND AT TIME OF APPLICATION.

Class.	At normal times.			At time of application.		
	White.	Negro.	Total.	White.	Negro.	Total.
Total families having some income in addition to earnings	91	115	206	99	124	223
Families[a] (included in above) having pensions	29	14	43	29	14	43

KIND OF AID GIVEN.

The following table, showing the kind of aid received by these families, gives an insight into the pressing needs of the distressed poor:

FAMILIES RECEIVING AID IN 1905, BY KIND OF AID FIRST GIVEN.

Kind of aid first given.	Families.		
	White.	Negro.	Total.
Cash	1	1	2
Clothing	68	57	125
Clothing and food	5	13	18
Clothing and fuel	7	4	11
Clothing, food, and fuel	3	2	5
Food	175	270	445
Food and cash for rent	1	.....	1
Food and lodging	1	.....	1
Food and fuel	71	164	235
Food, fuel, and rent	1	.....	1
Fuel	98	204	302
Medicine	1	.....	1
Rent	8	4	12
Sanitarium treatment	1	.....	1
Supplies	.....	1	1
Transportation	9	8	17
Transportation and rent	1	.....	1
Not reported	1	3	4
Total	452	731	1,183

This table shows that lack of food was the most potent factor in driving people to seek charity. In 60 per cent of all the cases tabulated food constituted either the whole or a part of the donation. Next to food, fuel is most frequently sought by charity applicants. In nearly half the cases of relief given in 1905 fuel was one of the articles first given. Frequently recourse is made to charity because the usual supply of fuel is cut off by severe weather. Many very poor families are accustomed to get their fuel in a haphazard way, picking coal and cinders from public dumps and private ash heaps and gathering stray pieces of wood here and there.(a) The charity records bring out this fact. In 40 families it was the custom to gather fuel wherever it could be secured for nothing, and in a number of cases

[a] See Bulletin of the Bureau of Labor, No. 64, p. 610.

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distress was due to the fact that cinders could not be picked from the dump because of the ice and snow.

After food and fuel, clothing is most frequently given. A word of explanation about the frequent giving of clothing is necessary. In a great many instances the clothing consisted of shoes given to children in order that bare feet might not prevent attendance at school. Cases happen where a family that can afford most things can not buy shoes for the children, and without shoes the children can not attend school. In such a case the charity organization comes to the relief of the family and gives the necessary shoes, even though there be no acute distress. This policy, with respect to the giving of shoes to enable children to attend school, materially increases the number of times clothing is given and adds to the charity roll quite a number of families who ordinarily would not belong there.

The number of times rent appears in the table by no means measures the distress that is connected with the arrears of rent. Next to the food problem the rent problem is unquestionably the one that presses most heavily upon the poor. The charity reports give many instances of arrears of rent. Notices of ejectment, costing the tenant $1.85 for service, are constantly appearing. Sometimes a letter from the landlord appears, as follows: "You have six days from the 25th of this month, which was last Tuesday, the day that judgment was rendered against you, to vacate the room you occupy. The constable will be there when the six days are out if you are not by that time removed." The records show that the constable knows how to fulfill his duty. The following are from the charity agents' reports:

"Yesterday woman and her children were set out of doors. All slept on the porch last night."

"Put out on street on a rainy day."

"Put out on street in spite of agent's protest."

"The rent not having been paid, the family were set out in the midst of a heavy snowstorm."

The records, however, do not always show the landlord to be cruel and hard-hearted. "I have given," says a landlord in a letter to the agent, "notice to Mrs. X to move. I wish it could be accomplished in such a way as to avoid the publicity which might hinder her from getting another house." In this note can be seen the real nature of the hardship of being turned out of doors for nonpayment of rent. Ejectment not only puts a family out on the street, but it also at the same time closes all doors against the family. No landlord wants a freshly ejected tenant. The poor know this and make every effort to avoid ejectment. In the archives of poverty nothing is sadder than the accounts of the efforts that are made to meet the rent.

"Said that she had to pay her last cent to-day on her rent and was now out of food and fuel and would have to wait until she has another week's work before she could buy food and fuel."

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"Sold feather bed and pillows for enough to pay the rent."

"Said she was going to pawn her skirt to pay for rent."

"They had just gotten enough money for rent and if they could keep that without paying anything for groceries they would be able to pay up rent on the following day."

In the above excerpts can be discerned the policy of the poor in respect to rent; they will pay the rent money even if it takes every cent they have to do so and they afterwards have to go to charity for food or for fuel. The serious results of ejectment cause them to do this. This policy goes far in explaining why so few cases of assistance in rent appear in the table. There is another reason why the table does not show a larger number of rent cases: The charity organization does not make it a practice to pay the rent of applicants. Only in extreme cases will it undertake to furnish relief of this kind. An old woman on her deathbed had an ejectment notice served on her. There was nothing to do but pay the rent. In such cases the charity organization will meet the arrears, but in ordinary cases it does not undertake to do this.

Since the 12 cases of rent relief found in the table on page 893 give no idea of the magnitude of the rent problem in the lives of these families, a separate study bearing on the subject was made, and the results embodied in the following table. In this table is given the number of families in which financial pressure, due to rent, figured either directly or indirectly in the distress:

NUMBER OF WHITE AND NEGRO FAMILIES HAVING ARREARS OF RENT AND CHATTEL-MORTGAGE LOANS, BY DESCRIPTION OF FAMILIES.

Description of family.	Number of families having—					
	Arrears of rent.			Chattel-mortgage loans.		
	White.	Negro.	Total.	White.	Negro.	Total.
Husband and wife	5	5	10			
Husband, wife, and 1 child	10	9	19		1	1
Husband, wife, and 2 children	18	2	20	1		1
Husband, wife, and 3 children	14	4	18	2		2
Husband, wife, and 4 children	18	7	25	3	2	5
Husband, wife, and 5 children	10		10			
Husband, wife, and 6 children	6	7	13	1	1	2
Husband, wife, and 7 children	3	3	6	1		1
Husband, wife, and 8 children	3	1	4			
Husband, wife, 2 children, and sister-in-law	1		1			
Husband, wife, 3 children, and mother-in-law		1	1			
Husband, wife, 3 children, son, wife, and child		1	1			
Husband, wife, 6 children, and grandmother	1		1			
Husband (separated) and 3 children		1	1			
Widower	2	2	4			
Widower and 1 child		1	1		1	1
Widower and 4 children and grandmother		1	1			
Widower and 6 children and woman		1	1			
Man (single)	1		1			
Man (single) and mother	1		1	1		1
Man, woman, and 5 illegitimate children	1		1	1		1
Widow	1	7	8			
Widow and 1 child	3	5	8	2	1	3
Widow and 2 children	3	3	6			
Widow and 3 children		5	5			
Widow and 4 children	1	4	5	1		1

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NUMBER OF WHITE AND NEGRO FAMILIES HAVING ARREARS OF RENT AND CHATTEL-MORTGAGE LOANS, BY DESCRIPTION OF FAMILIES—Concluded.

Description of family.	Number of families having—					
	Arrears of rent.			Chattel-mortgage loans.		
	White.	Negro.	Total.	White.	Negro.	Total.
Widow and 5 children	1	3	4	.....	1	1
Widow and 6 children	.....	1	1	.....	.....	.....
Widow and 7 children	.....	1	1	.....	.....	.....
Widow and 4 children and dependent	1	.....	1	.....	.....	.....
Widow, 1 child, and mother	.....	1	1	.....	.....	.....
Wife (separated)	.....	1	1	.....	.....	.....
Wife (separated) and 1 child	4	1	5	.....	.....	.....
Wife (separated) and 2 children	2	4	6	1	2	3
Wife (separated) and 3 children	2	4	6	.....	.....	.....
Wife (separated) and 4 children	1	.....	1	1	.....	1
Wife (separated) and 5 children	1	3	4	.....	.....	.....
Wife (separated) and 6 children	1	.....	1	.....	.....	.....
Woman (single)	.....	3	3	.....	.....	.....
Woman (single) and niece	.....	1	1	.....	.....	.....
Woman (single) and 2 children	.....	.....	.....	.....	1	1
Woman (divorced)	.....	.....	.....	1	.....	1
Total	115	93	208	16	10	26

Of the 1,183 families, 208 at some time(a) and to some extent found arrears for rent associated with their appeal to charity. Nearly a third of the families thus distressed were fatherless; that is, they had as heads either widows or wives whose husbands had abandoned them.

Arrears of rent is the most frequent form of debt among those stricken by poverty, but there are other forms that are accompanied by acute distress. One kind of debt frequently met with is the unpaid grocery bill. This is sometimes quite as pressing as an unpaid rent bill. Another form of debt that presses sorely upon these families is the chattel-mortgage loan. This is a debt that constantly threatens to take the furniture out of the house. The charity organization helps the poor in many ways with their chattel-mortgage troubles, but they seldom pay the debt outright. This form of relief, therefore, does not appear in the table on page 893 showing kind of aid first given. In the preceding table, however, can be seen the extent to which the chattel mortgage entered into the poverty of these poor. In 26 families the exactions of the loan company were felt. The rates of interest were those usually charged in similar transactions. In one case there was a loan of $25 to be paid in 18 fortnightly payments of $2.50—$20 for the use of $25.00 for nine months. In another case a widow was behind two months in the payment of a loan. She had all the money except $1, but the company, which had sent a notice of foreclosure threatening seizure the following day, demanded payment in full. Every cent of the debt had to be paid or the furniture would

(a) This enumeration was not confined to the year 1905.

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be taken. In this case the charity agent gave the needed dollar. The widow paid $4.40 for the use of $10 for four months.(a)

DELINQUENCIES OF CHARITY RECIPIENTS.

Statistics as to the moral conditions which prevailed in these families and the extent to which vice and crime were associated with the poverty of these charity recipients are shown in the following table:

NUMBER OF WHITE AND NEGRO FAMILIES FOR WHICH SPECIFIED MORAL DELINQUENCIES WERE REPORTED.

Moral delinquencies.	Families.		
	White.	Negro.	Total.
Brutality, by husband		1	1
Cocaine habit, by husband		1	1
Desertion, by husband	20	68	88
Desertion, by son-in-law	1	1	2
Desertion, by wife		3	3
Desertion, by husband and wife		1	1
Desertion and gambling, by husband	1		1
Desertion and intemperance, by husband	6	3	9
Desertion and licentiousness, by husband	2	2	4
Desertion, by husband; licentiousness, by daughter		1	1
Desertion, by husband; licentiousness, by wife	1	3	4
Desertion, by husband; lawlessness, by wife		1	1
Dishonesty, by husband	1		1
Dishonesty and licentiousness, by husband	2		2
Dishonesty and lying, by husband	1		1
Disorderly conduct, by husband		1	1
Forgery, by husband	1		1
Gambling, by husband	1		1
Intemperance, by daughter		1	1
Intemperance, by husband	67	23	90
Intemperance, by man	2		2
Intemperance, by son	4	1	5
Intemperance, by wife		1	1
Intemperance, by woman	2		2
Intemperance, by husband and wife	6	1	7
Intemperance and criminality, by husband		1	1
Intemperance and lawlessness, by husband	4	1	5
Intemperance and lawlessness, by son	1	1	2
Intemperance and licentiousness, by husband	2	1	3
Intemperance and lying, by husband	1		1
Intemperance and neglect of family, by husband	3		3
Intemperance and neglect of parents, by son		1	1
Intemperance, by husband; morphine habit, by wife	1		1
Intemperance, by husband and wife, desertion, by husband	1		1
Intemperance and desertion, by husband; licentiousness, by wife	1		1
Intemperance and lawlessness, by husband and son	1		1
Lawlessness, by husband		8	8
Lawlessness, by man	2		2
Lawlessness, by son		3	3
Lawlessness, by wife		1	1
Lawlessness and licentiousness, by children		1	1
Licentiousness, by child		1	1
Licentiousness, by daughter	4	10	14
Licentiousness, by granddaughter		1	1
Licentiousness, by husband	1	1	2
Licentiousness, by niece		2	2
Licentiousness, by wife	6	9	15
Licentiousness, by woman	2	15	17
Licentiousness, by husband and wife	3	2	5
Licentiousness, by man and woman	1		1
Licentiousness, by woman and daughter		2	2
Licentiousness, by daughter; lawlessness, by son		2	2
Licentiousness and mendicancy, by daughter		1	1
Licentiousness, by wife; neglect, by husband		1	1
Lying, by wife		2	2
Mendicancy, by family	1	1	2

(a) For a full account of the conditions of borrowing among the poor, see Bulletin of the Bureau of Labor, No. 64, pp. 622–633.

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NUMBER OF WHITE AND NEGRO FAMILIES FOR WHICH SPECIFIED MORAL DELINQUENCIES WERE REPORTED—Concluded.

Moral delinquencies.	Families.		
	White.	Negro.	Total.
Mendicancy, by husband	1		1
Mendicancy, by wife	2	1	3
Mendicancy, by woman	1		1
Mendicancy and intemperance, by husband and wife	1		1
Murder, by husband		1	1
Neglect of parents, by children	2	5	7
Neglect of parents, by daughter		2	2
Neglect of parents, by son	2	9	11
Neglect, by mother		1	1
Neglect, by son-in-law		1	1
Neglect of mother, by children		1	1
Neglect of mother, by son		2	2
Neglect of family, by husband	7	10	17
Neglect of family, by husband; mendicancy, by family	1		1
Thievery, by husband	1	1	2
Thievery, by sister		1	1
Thievery, by son	3	2	5
Thievery, by wife		1	1
Thievery and general immorality, by husband		1	1
Total	174	220	394

In almost exactly two-thirds of the families there was no palpable delinquency whatever. This is to say, that a fairly decent standard of morals prevailed in a very large majority of the families. In almost exactly one-third of the families there was marked delinquency of some kind. Of the 394 families tainted by delinquency 174 were white and 220 colored, these numbers representing 38 per cent of the total white families and 30 per cent of the total colored families, respectively.

In charging delinquency against a family its whole charity record was taken into consideration, and in locating a fault it was sometimes necessary to go outside the economic group. In some cases it was exceedingly difficult to say whether there was delinquency or not. It was difficult to determine, for instance, in a case where the chief wage-earner—a widow—was arrested and incarcerated for stealing bread for her children whether there was delinquency. Because it was lawlessness it was decided that the woman was a delinquent. A man at the age of 59 married a young woman of 28. After the birth of several children there was a separation. Then the husband returned, another child was born, and there was another separation. This alternation of desertion and home-staying continued until the time of the investigation, when the husband, then at the age of 72, was a deserter and when there were seven children in the family. The husband was not charged with moral delinquency on account of the desertion, for the reason that at no time had the man been able to contribute much to the family support. In another very interesting case a man and a woman, who had never been legally joined in marriage, were living together and raising a family of children.

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There seemed to be perfect loyalty, and the adulterous relation seemed to have no kind of effect upon the affairs of the household. Economically it was the same as if there had been a marriage certificate. The family was stamped of course with licentiousness, but the action of the couple contrasts favorably with the many cases where women with illegitimate children were abandoned. The facts bearing upon delinquency, besides being difficult to interpret, are also sometimes exceedingly difficult to ascertain. In one case, after a certain family had been scheduled as being without delinquency, the information was unearthed that the husband was a drunkard and for several years had been going on long sprees. During these years the charity agent had been patiently trying to learn the cause of the trouble, but her inquiries had been skillfully eluded.

The leading delinquencies as shown by the table are intemperance, desertion, licentiousness, neglect by natural supporters, lawlessness, thievery, and mendicancy. First among the delinquencies stands intemperance. In 128 families, more than 10 per cent of the whole number receiving charity and nearly one-third of all those in which delinquency was visible, intemperance was present. In the families afflicted by intemperance the husband was the delinquent in 114 cases. In not one family in a hundred is a drunken woman found. In 96 cases the intemperance was in white families and in 32 cases it was in colored families.

Next to intemperance stands the vice of desertion. In 144 cases there was wanton abandonment of the family, and in 137 of these cases the offender was the husband. In 102 cases the desertion occurred in colored families and in 42 cases in white families.

After intemperance and wanton abandonment the evil most apparent was licentiousness. Evidence of this delinquency was in many cases, of course, largely a matter of inference. Sometimes when the evidence was direct and clear it was still hard to brand the family with moral turpitude, as in the case of an old colored woman of 70 years who had never been married and who yet was the mother of children. Her error, however, was of another age and was committed in slavery times. The circumstance that most frequently supported the charge of licentiousness was the presence of illegitimate children. Of these there was an unusually large number—11 illegitimate white children and 68 illegitimate colored children. Of the 64 cases in which licentiousness is the principal charge women were the offenders in 61 cases. This disproportion between the sexes is due to the fact that the male offender was most frequently an outsider who could not be included in the enumeration. In 17 cases this vice was found in white families and in 47 cases in colored families.

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Of the 43 cases of neglect by natural supporters shown in the table more than a third were chargeable to husbands and were therefore similar to cases of desertion. This neglect very often consisted in staying away from home for several days and nights at a time and spending whatever cash might be on hand. Sometimes the neglect took the form of intermittent desertion; the husband would go and come, supporting the family when at home and leaving it to shift for itself when away. Next to husbands, the greatest offenders in the way of neglect were grown sons. In 11 cases sons who were able to help their parents ungratefully withheld the sorely needed aid.

Mendicancy can not figure largely among delinquencies of charity recipients, for the reason that the charity organization withholds aid from mendicants. This evil, however, is one that the charity people have to deal with constantly, and now and then, as the table shows, a family in which there are beggars succeeds in securing doles. This is not surprising when the methods to which mendicants resort are considered. One family succeeded in exploiting fifteen different churches and organizations, the charity organization among the number. There were eight in the family, five being over 15 years of age, but nobody worked, not even the male head of the family. Another instance was that of an oily-tongued person who posed as a preacher and who received aid for several years before he was discovered to be a beggar and a fraud. In another case a mendicant family was holding membership in three different churches and passing under a different name in each church. The ruse was not discovered until the charity organization had been for some time a victim of the deception.

But more troublesome than mendicancy itself is a certain reliance upon charity, a certain inclination to pauperism, which crops out in many charity recipients. Such a spirit of dependence was visible in 69 families, 40 of which were white and 29 colored. The reliance upon charity here referred to did not quite assume the form of a positive delinquency. The dependence sometimes took on the aspect of faith, as in the case of an old man who, when asked why he did not go to the poorhouse, said that he relied on God to take care of him and keep him out of the poorhouse. When applying for charity it seemed to him that he was only falling in with a divine scheme. In some cases it is plain that the feeling of reliance is due to the unwise action of friends or of churches. "I fear the family has been too much petted by the church people" is the impression of one agent in respect to a family that was accustomed to haunt the charity office. Quite often the person put down as relying upon charity was an old colored woman who was used to getting help here and there from white people and who regarded the charity agent simply as one of her "white folks." A remarkable case of dependence was that of a woman who relied on an ex-slave to support her. The faithful domestic worked

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only to keep her former mistress from want, and when the earnings were too scant for this it was the ex-slave and not the mistress that visited the charity office.

Farther removed from delinquency than reliance on charity is a certain perversity of pride which figures in these cases with sufficient frequency to warrant mention here. In at least a dozen cases the applicants went to the charity office because they were too stubborn or too proud to appeal to natural supporters who were able and willing to help them. "A rich brother would give aid," is the agent's note in one case, "but because she thinks he would give grudgingly she would rather take charity." In another case a woman applicant had relatives who would have helped her gladly. The agent wrote to the applicant suggesting that she appeal to her relatives for aid. The applicant refused, saying in the letter of reply: "It is very easy for you to advise me to do what Heaven and earth couldn't make you do if you were in my place."

In a very few cases the delinquency was so comprehensive and multifarious as almost to warrant its being classified as total depravity, but that classification was of course not practicable. In such cases poverty and delinquency are indissolubly united. The records in cases of this kind usually extend over many years—in one case over twenty years—and the account is a long story of crime, licentiousness, intemperance, and mendicancy.

CAUSES OF DISTRESS OF CHARITY RECIPIENTS.

Consideration is next given to the causes which operated to produce in more than a thousand families a distress so deep that relief could be found only in a charity office.

In characterizing the causes of poverty it is well to use only such terms as the poverty-stricken person himself would understand. In doing this the word "inefficiency" should rarely be used. A machine that does not fulfill the purpose for which it was constructed may be said to be inefficient and, by a metaphor, a man who does not do well the work for which he has been trained may be charged with inefficiency, but it is seldom that the charity seeker can justly be called inefficient. The conditions of life which surround the poverty-stricken class are incompatible with anything like efficiency. "It is the bitterest portion of the lot of the poor that they are deprived of the opportunity of learning to work well. To taunt them with that incapacity and to regard it as the cause of poverty is nothing else than a piece of blind insolence. Inefficiency is one of the worst and most degrading aspects of poverty; but to regard it as the

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leading cause is an error fatal to a true understanding of the problem."(a)

The same reasons that dissuade from assigning "inefficiency" as a cause of poverty dissuade from assigning "ignorance" as a cause. It is true that large numbers of charity seekers are ignorant of the art of right living, and the poverty of these might be ascribed to "ignorance," meaning that they were ignorant of the art of right living, but such a classification would not throw much light on the subject of poverty. Nor would it tell the charity seeker any useful things about himself. If a man is told that his poverty is due to drunkenness, or licentiousness, or lawlessness, or mendicancy, he will understand and may respond morally to what is said, but if he is told that it is due to ignorance he will not, can not, have the faintest notion of what is meant. Ignorance, like inefficiency, is one of the ugly aspects of poverty, but it can not be usefully regarded as one of the causes of poverty.

There is a phase of ignorance that may sometimes be rightly characterized as a cause of poverty. This is illiteracy. Modern life demands a knowledge of reading and writing, and a person who is ignorant of these arts is often as seriously impeded in the race for a livelihood as one who has a lame foot. The matter of illiteracy was therefore not disregarded in this investigation. As far as the records gave an account of the literacy of a family the facts were carefully noted. But the account was in many instances unsatisfactory and incomplete, and taking them altogether the facts relating to illiteracy were not full enough to tell the whole story. A correct picture of the literacy of those families was desirable, but even if one had been obtained, the additional knowledge thereby furnished would not have influenced the analysis now being made, for it happens that in these charity cases illiteracy, pure and simple, figures hardly at all as a cause of poverty. In one case a boy could not get employment as a messenger because he could not read and write. In another case a delicate man could not get a clerkship in a store for the same reason. Here ignorance in the sense of illiteracy was unquestionably a cause contributing to the poverty. In neither case, however, did it happen to be a cause of such weight as to deserve notice in the schedules.

"Irregularity of employment" is another expression that has been avoided in the characterization of the causes of poverty, although this cause is at the bottom of so much distress that it might be justifiable to call irregularity of employment the "causing cause" of poverty. But such language is too broad to be useful. Industrial

[a] J. A. Hulson: Problems of Poverty, p. 167.

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society, especially that segment of it wherein these charity recipients are comprised, is organized on the basis of irregularity of employment. Among these workers there is no certainty that employment of any kind, regular or irregular, will be secured, and even when regular employment has been secured, many things, like sickness, severe weather, accident, fire, flood, panic, dullness of trade, strikes, or lockouts intervene to make it irregular. To say, therefore, that a man's poverty is due to irregularity of employment is hardly more than to say that it is due to the adverse conditions which prevail in the industrial world.

But, while irregularity of employment has not been used as a convenient term in the enumeration of the causes of poverty, the subject has nevertheless received careful attention in this study. In every case examined this question was asked: Does the chief wage-earner of this family seem to have a steady job? In those cases where the employment seemed to be of a kind that usually continues right along without serious break, the employee was regarded as being regularly employed. In all other cases the employment was put down as irregular. The result is seen in the table on pages 886 and 887. Of the 1,051 cases in which it was possible to characterize the employment of the chief wage-earner as regular or irregular, 919 were irregular. That is to say, in about one family in eight the chief wage-earner could feel that he had steady work, while in seven-eighths of the cases the chief wage-earner was liable to loose his job at any moment. "The curse of the American workman," says Dr. T. S. Adams, "is irregular employment."(a) If this is true of the whole class of workmen, how distressingly true is it of the workmen among these charity recipients.

The expression "financial element" is used in this discussion as a comprehensive phrase referring to a certain restricted class of causes which operate to produce distress. At first thought "financial element" would seem to be at the bottom of every case of distress. In a certain sense this is true, but for the purpose of this analysis a case of distress can not be so easily disposed of. For instance, there was a man whose wages were $5 a day, whose services were in demand, and who worked quite regularly, but he squandered his money by drinking and gambling, and his wife and children were thrown upon charity. It would not be correct to ascribe this distress to a lack of money, and the case shows that there is a nonfinancial as well as a financial element which operates to produce distress. The financial element, as used here, includes one, or several, or all of the following causes: Insufficient earnings, lack of employment, sickness, accident, old age, and severe weather. All of these in the last analysis operate

(a) T. S. Adams: Labor Problems, p. 170.

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like a financial cause in producing distress. In 28 of the families the "financial element" was not visible at all. In these families it was not possible to point to insufficient earnings, nor to lack of employment, nor to sickness, nor to accident, nor to old age, nor to severe weather, as contributing to the poverty; the financial element figured neither openly nor in disguise. Of the 28 families in which only the nonfinancial element appeared as the cause of distress 20 were white and 8 were colored.

IMMEDIATE CAUSES OF DISTRESS.

Usually a case of distress acute enough to drive a family to charity is complicated. The following is typical of many: "The husband has been out of work for two months; they are back in their rent and notice has been served and they are likely to be set out on the street. There is nothing in the house to eat, while the wife expects to be confined in a very short time." At first glance it appears that the cause of distress in this case can be expressed by a single phrase. Lack of employment would seem to account satisfactorily for the distress. If, however, the record went on to show that a prolonged spell of cold weather prevented the husband from following his usual vocation, an indirect or contributing cause, namely, severe weather, would have figured in the account. If further study of the record showed that the wife was an invalid with tuberculosis and that for years the family had been kept down by reason of her condition, still another fact would have to be reckoned with, and sickness might have to be set down as the underlying, permanent cause of the destitution.

This typical case, then, foreshadows three classes of causes, direct or immediate causes, indirect or contributing causes, and dominant or persistent causes.

Immediate causes are those catastrophies—the debauch of the father, the confinement of the mother, the sudden and unexpected loss of work, the visitation of death—which overtake the family. The immediate cause is the one that impinges directly upon the consciousness of the applicant and the one that seems to hurry him to the charity office. It is the cause which the applicant himself is apt to assign as a reason for making an appeal to charity. "What brings you here asking for aid?" inquires the charity agent of the applicant. In the answer to this question will usually be found what is here called the immediate cause.

The direct causes of distress in all the families are shown in the table which follows:

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NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905, BY IMMEDIATE CAUSES OF DISTRESS.

Immediate cause of distress.	White.		Negro.		Total	
	Families.	Persons.	Families.	Persons.	Families.	Persons.
Accident	17	85	38	155	55	240
Blindness			4	15	4	15
Death in family			3	16	3	16
Desertion	5	21	7	24	12	45
Incarceration	6	16	7	22	13	38
Insufficiency of earnings	26	126	55	241	81	367
Intemperance	12	77			12	77
Lack of employment	196	[a] 821	201	[b] 831	397	1,652
Lack of employment and old age			1	3	1	3
Lameness	1	3	1	3	2	6
Loss by fire	2	8	3	9	5	17
Loss of horse	1	4			1	4
Loss of income from roomers			1	3	1	3
Loss of money			1	2	1	2
Neglect by natural supporters	4	18	7	26	11	44
Old age	9	11	40	53	49	64
Old age and blindness			1	2	1	2
Severe weather	2	10	4	12	6	22
Sickness	170	[c] 650	355	[d] 1,081	525	1,740
No good cause	1	1	2	7	3	8
Total	452	[e] 1,860	731	[f] 2,505	1,183	4,365

[a] Including 4 Negroes, members of white families.
[b] Not including 4 Negroes, members of white families.
[c] Including 5 Negroes, members of white families.
[d] Not including 5 Negroes, members of white families.
[e] Including 9 Negroes, members of white families.
[f] Not including 9 Negroes, members of white families.

Sickness easily leads the list. In nearly half the families that applied for aid for the first time in 1905 the distress was directly connected with some form of bodily ailment.[a] There was almost every kind of disease which flesh is heir to, but the greatest distress was caused by rheumatism and tuberculosis, the latter leading by far all the other diseases.

Figures can not tell the complete story of the ravages made by sickness in these families. In one case the whole family was prostrate at one time. In another case a teamster regularly employed at fairly good wages by a great express company was brought to charity by a prolonged illness. In still another case where the regular wages of the husband was $60 a month the sum of $800 had been saved. Sickness came and remained for many months and before it departed every cent of the savings was wiped out, and the family

[a] The cases of sickness include 71 cases of childbirth. Confinement, physiologically considered, is not sickness, but its economic result is the same as that of sickness. In the records of some families confinement time is the only time when charity is resorted to. The aid given upon the occasion of confinement is quite frequently clothing for the new-born babe. "Found woman needed a few articles of clothing for the baby that was to be born," is the note of the agent in one case. "Would you be willing to see that the mother has an outfit for the baby? If you do not I fear the little thing will have to be wrapped up in rags," are the words of a letter written to the agent in respect to another case.

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was reduced to charity. Good wages, thrift, and regularity of employment, all combined, availed not to save the family from the havoc of a long illness.

Next to sickness among the causes of immediate distress is the lack of employment, more than one-third of the families having sought relief for this cause. It will be understood that lack of employment is to be taken here as meaning an entirely different thing from irregularity of employment. The latter expression as employed in this article has been used to denote a certain unsteadiness in the nature of the man's job or a certain insecurity in his tenure of it. Lack of employment on the other hand refers to the man's definite inability to get work during a definite period of time whether his usual vocation is classed as regular or irregular. For example, a man whose occupation is that of a clerk in a store loses his position and before he can secure another place becomes an object of charity. Here the man's employment is classed as "regular" but the immediate cause of his distress is put down as "lack of employment."

The charity records are constantly referring to the evil resulting from lack of employment:

"X has been out of work nine weeks and has used up all he saved." In this case X was a sober man and a member of a union, with a wage of $3.50 per day—when he could get work.

"While the husband was at work his wages, together with those of his wife, were sufficient to support his family, but when the husband lost his job for only a week the family was thrown upon charity."

"The man earned $4 a day at structural ironwork, but a long-continued spell of bad weather exhausted the funds and brought the man to poverty."

"The father had tramped all over the city looking for work until his feet were sore."

In the last excerpt the reference to feet made sore by tramping in search for work calls attention to one of the most serious phases of the distress that is wrought by lack of employment. If a period of enforced idleness were a season of recuperation and rest there would be a good side to lack of employment. But enforced idleness does not bring recuperation and rest. The search for labor is much more fatiguing than labor itself. An applicant sitting in one of the charity offices waiting for the arrival of the agent related his experiences while trying to get work. He would rise at 5 o'clock in the morning and walk 3 or 4 miles to some distant point where he had heard work could be had. He went early so as to be ahead of others, and he walked because he could not afford to pay car fare. Disappointed in securing a job at the first place, he would tramp to another place miles away, only to meet with disappointment again. Then

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would follow long journeys to other places. After a day consumed in useless tramping he would make his way home, exhausted in body and depressed in spirit. The next day would be a repetition of the day before, and every day it became more and more difficult to go home to his family without anything to give them. "It almost grieves a man to death," he said, "not to have something to give his wife and children." As the man told his story he drove home the truth that lack of employment means far more than simply a loss in dollars and cents; it means a drain upon the vital forces that can not be measured in terms of money.

Next to sickness and lack of employment in the list, but a long way behind both, stands insufficient wages as a direct cause of distress. Insufficient wages means that the rate of wages was so low that the family could not live upon the earnings, even though the full wage was being received at the time of the application. The preceding table shows that 81 families whose wage-earners were regularly employed were compelled to supplement their earnings by doles from the charity office.

In determining whether the wage was sufficient for subsistence or not, a calculation was made based upon the supposition that an adult male requires at least $1 per week for food (uncooked).[a] In estimating for rent in the calculation, a monthly sum ranging in amount from $5 to $8, according to the size of the family, was allowed. When these allowances for food and rent consumed all (or practically all) the earnings of the family visible at the time of the application, the immediate cause of the distress was determined to be insufficient wages. A glance at the earnings shown in the tables on pages 890 to 892 will show that the methods of determination here adopted would very frequently result in finding insufficient wages as the cause of the distress. But the conclusions embodied in the table on page 905 were not drawn from the preceding tables. In these tables account was taken only of the wages of the chief earner, whereas in the later table the earnings of all the members of the family were taken into account. In making the table on page 905, very frequently a family was regarded as receiving insufficient earnings, even though the exact amount of these earnings was not stated. Thus where the applicant was a widow with 6 small children and her earnings consisted only of what she made at the washtub, the cause of distress was put down as insufficient earnings, for the reason that the regular work of one woman at washing and ironing will not bring in enough to support a family of 7. When forming conclusions as to whether the wages received were sufficient or not, hard and fast rules were often found to be impracticable. Each case was

[a] See Bulletin of the Bureau of Labor, No. 64, p. 603. The consuming power of a family was estimated by the method indicated on page 602 of Bulletin 64.

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studied in its entirety and judgment was based upon all the facts. A few illustrations will serve to show how this subject was treated in cases where wages were indefinitely stated:

1. A family of 8 persons. The rate of wages is not stated, but the records show that when it was a family of 6 persons the husband was earning $1.52 per day as a laborer and that this was not sufficient at times to keep them from charity. Although the rate of wages at the time of application in 1905 is not given, the occupation of the husband was in that year still that of a laborer, and since the family had increased to 8 persons there was no hesitation in ascribing the distress to insufficient earnings.

2. A family of 9 persons. The father is a waiter, the wife a laundress. A girl of 16 nurses and a boy of 15 earns a little now and then at jobbing. The young children go to school. When all the wage-earners are at work, there is no need for charity, but when the wages of a single member of the family are cut off or interfered with recourse to charity had to be made. For the reason that it was only normal and inevitable that some untoward events should arise, the destitution was put down to insufficient wages. Where the wages are so low that the least ripple of adversity brings a family to poverty, wages may be fairly regarded as insufficient.

3. A case extending over many years. An aged couple work and make what they can. Their work was irregular and sometimes they earned so little that they were compelled to visit the charity office. Here not insufficient earnings but old age was regarded as the direct cause.

4. A family of two—man and wife—both quite old. The man served as a watchman at $5 per week, a sum not sufficient to keep himself and wife from charity. The man worked regularly and performed his work well. Not old age, but insufficient wages was here assigned as the direct cause.

5. A family of 9 persons. Husband's salary $9 per week. Oldest boy clerks at $3 per week, but his earnings are not regular. Agent states that "man has regular work, but family is so large that it is not sufficient for their needs." The distress in this case was determined to be due to insufficient wages, the conclusion being based in part upon the comment of the agent.

In 55 families the immediate cause of distress was accident. This cause in its economic results is quite like that of sickness, and viewed in this light the cases of accident might very properly have been classified with those of sickness. One phase, however, of the subject of accidents among the poor requires special notice—the phase bearing upon the question of the employer's liability. As the cases are studied one is impressed with the justness of liberal liability or com-

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pensation laws for workmen. A few of the agents' notes descriptive of accidents may suffice to show present conditions:

1. A man was working, helping in the building of a house. While wheeling a wheelbarrow he stepped aside to let a fellow-workman pass. In passing he was jostled and was caused to lose his balance. He fell and was made a permanent cripple. He received no compensation.

2. A man was working for a large transportation company, handling boxes. At 3 p. m. he hurt his foot severely. Nothing was allowed in the way of liability, and the statement is made that the man was paid for only three-fourths of a day's work.

3. A man was injured by an explosion while working on a sewer for the city. In this case a small indemnity was allowed, but the authorities explicitly stated that the city was under no obligations to give anything, although the disability caused by the accident was permanent.

4. A man was working at a freight depot and while in the performance of his labors met with an accident which cut off his earnings for several weeks, and which sent him to charity. No compensation.

5. A man was caught in a rope and crushed before the machinery could be stopped. The accident, it was alleged, was due to the fact that there were not proper appliances of safety to the machine. No compensation.

Fifth among the causes that urged these families to seek the charity office was old age. In 49 families the applicant's earning power had been exhausted by the weight of years. "I am worn out," was the way one applicant, a physician of four score and seven, expressed it. In many of the old-age cases there is a record of but one visit to the charity office. This often meant that the applicant had found a permanent home either in the grave or in the poorhouse.

The five leading direct causes that operate to throw the poor upon charity have been pointed out. It is seen that sickness, lack of employment, insufficient wages, accident, and old age constitute nearly 94 per cent of all the direct causes. This is to say that in nearly nineteen cases out of twenty the impelling cause of the application is directly referable to a financial factor; either the rate of wage is too low for subsistence, or there is a stoppage of income due to a lack of employment, to sickness, to accident, or to old age.

Most of the remaining direct causes are so remotely connected with the question of wages that they may be regarded as nonfinancial. Sudden desertion may plunge a family into temporary distress even when the deserter is receiving high wages. A spree will often cause a resort to charity even though the husband is in receipt of a fairly good income. A man whose family is subsisting upon charity may be lying in prison for the commission of a crime, yet his incarceration, the direct cause of his family's distress, may have had nothing whatever to do with the question of wages. The nonfinancial direct

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causes, however, form but an insignificant portion of all. In only about one case out of twenty can it be said that a financial element did not figure as an immediate cause of distress.

CONTRIBUTING OR INDIRECT CAUSES OF DISTRESS.

Usually the story of a charity case is only begun when the direct cause has been stated. In the following table it is shown that in 854 of the families a contributing cause might be added to the cause that appears on the surface. In 329 families the direct cause told the whole story. The case was simply due to a temporary loss of employment, to a debauch, to a spell of cold weather, or to some other isolated and perhaps nonrecurring circumstance.

NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905, BY CONTRIBUTING CAUSES OF DISTRESS.

Contributing cause.	White.		Negro.		Total.	
	Families.	Persons.	Families.	Persons.	Families.	Persons.
Accident	1	4	5	18	6	22
Affliction of children	.....	.....	1	3	1	3
Blindness	1	2	5	15	6	17
Blindness (partial)	1	1	2	8	3	9
Death in family	.....	.....	3	17	3	17
Deformity	.....	.....	1	1	1	1
Desertion	26	95	61	212	87	307
Disability	1	3	.....	.....	1	3
Dullness of trade	1	3	.....	.....	1	3
Feeble-mindedness	4	11	2	12	6	23
Imbecility	.....	.....	1	4	1	4
Incarceration of husband	.....	.....	3	16	3	16
Insanity	3	4	.....	.....	3	4
Insufficient earnings	15	79	37	211	52	290
Insufficient earnings and neglect	1	8	.....	.....	1	8
Insufficient earnings and shiftlessness	1	9	.....	.....	1	9
Intemperance	50	[a] 251	17	[b] 102	67	353
Intemperance and old age	1	4	.....	.....	1	4
Lack of employment	12	65	29	97	41	162
Lameness	.....	.....	4	10	4	10
Lawlessness	1	1	.....	.....	1	1
Lawlessness and licentiousness	.....	.....	2	10	2	10
Licentiousness	4	9	20	63	24	72
Loss of money	1	3	1	4	2	7
Maltreatment	1	1	.....	.....	1	1
Mendicancy	3	15	2	7	5	22
Morphine habit	1	3	.....	.....	1	3
Neglect by natural supporters	8	36	24	58	32	94
Old age	36	60	76	140	112	200
Old age and lawlessness	1	1	.....	.....	1	1
Old age and neglect	.....	.....	1	2	1	2
Old age and sickness	.....	.....	1	3	1	3
Severe weather	22	106	57	188	79	294
Severe weather and old age	.....	.....	2	4	2	4
Shiftlessness	37	146	18	72	55	218
Shiftlessness and intemperance	.....	.....	1	9	1	9
Shiftlessness and neglect	1	6	.....	.....	1	6
Shiftlessness and thievery	.....	.....	1	2	1	2
Sickness	90	[c] 404	146	[d] 601	236	1,005
Sickness and intemperance	1	7	2	12	3	19
Sickness and neglect	.....	.....	1	2	1	2
Sickness and severe weather	.....	.....	1	8	1	8
Thievery	1	2	1	4	2	6
None apparent	126	521	203	590	329	1,111
	452	[e] 1,860	731	[f] 2,505	1,183	4,365

[a] Including 2 Negroes, members of white families.
[b] Not including 2 Negroes, members of white families.
[c] Including 7 Negroes, members of white families.
[d] Not including 7 Negroes, members of white families
[e] Including 9 Negroes, members of white families.
[f] Not including 9 Negroes, members of white families.

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The list of contributing causes differs essentially from that of immediate causes. Sickness, insufficient earnings, lack of employment, and accident figure very much less than they did in the direct causes, while desertion, intemperance, and neglect by natural supporters figure very much more. New causes, too, appear. Among these are licentiousness, shiftlessness, mendicancy, and thievery. Plainly none of these could very well appear as direct causes. The applicant could hardly say that he made the appeal for charity because he was a beggar or because he was a thief.

A broad survey of the surface causes of distress showed that in a vast majority of cases the trouble was at bottom due to financial adversity. A broad survey of the contributing causes shows that the undercurrent of distress is strongly colored with moral delinquency. Desertion, intemperance, licentiousness, neglect by natural supporters, mendicancy, and thievery constitute about 25 per cent of all these contributing forces. The subject of contributing causes is therefore closely interwoven with the subject of moral delinquencies.

Among the contributing causes is one which has not been set down as a delinquency but which in quality closely approaches delinquency, namely, shiftlessness. In 55 families this has been given as the contributing cause. Shiftlessness is here regarded as consisting in a failure to make the best of opportunities. It is not exactly laziness. Laziness does not appear in any of the tables as a cause of distress, for the reason that the charity agents will not give to lazy people. If the wage-earner is suspected of being lazy a "work test" is applied. When the industry of a man is a question of doubt he is sent to the municipal workhouse where he can earn some money at sawing wood. A woman suspected of being lazy is given an opportunity to earn something by sweeping or cleaning or scrubbing. If the applicant will do the work provided for him he is not regarded as being lazy. If he will not do the work he is put down as lazy and relief it withheld. Thus lazy applicants are not enrolled among the recipients and, theoretically, laziness is not discoverable in the records.

Because shiftlessness is not downright laziness it has not been set down in this study among the moral delinquencies, the class in which laziness undoubtedly belongs. But shiftlessness is very similar to laziness. For instance, a family comes from the country to live in the city. It can not stir itself to meet the demands of city life. There are girls in the family old enough to work, but they shrink from work because they have not been accustomed to earn a living and are unable to adjust their notions to urban conditions. Positions are secured for them, but they work in a half-hearted way and soon find themselves out of employment. The wages of the father are insufficient to feed all the mouths, and the family finds itself in distress. In the records of such families there is an habitual failure

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to take hold and do the best that can be done, and where such failure is evident it has been characterized as shiftlessness.

One other cause contributing greatly to the poverty of these families must receive notice here. This is severe weather. In 79 families nature itself operated to produce distress. "Please be kind enough," said one applicant in a note written to the agent, "to send me some groceries and fuel, as I am very much in need. It is very hard to get on now with all this family, and my husband has not been working this cold weather when the ground is frozen. Remember me, please, and God will remember you." Lack of employment was put down in this case as the direct cause, but a cause almost as direct was severe weather. Some of the agents' notes show the ways in which the cold weather contributes to poverty:

"The family was in need of fuel, as they were unable to pick up any cinders on account of snow."

"It was simply impossible to get out and do work, there was so much snow on the ground."

"He (a blind man) couldn't stand on the street and sell shoe strings and peanuts, it was so cold."

"Impossible to do her washing, as the pipes and hydrants are frozen and she has to walk three squares for water."

"He (a ragpicker) can not work in the ice and snow."

The connection between severe weather and poverty in Washington is brought out in the following table. It is found that in nearly three-fourths of the cases aid was given for the first time in the months of December, January, and February, whether the first aid given for the year 1905 or the first recorded aid for any year is considered.

NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905, BY MONTHS IN WHICH THE FIRST AID FOR THAT YEAR WAS GIVEN.

Race.	Families to which first relief was given in the month of—													Total.
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Not reported.	
White	134	102	36	13	11	11	15	16	12	11	27	64	.....	452
Negro	266	248	41	20	8	9	5	12	6	10	26	79	1	731
Total	400	350	77	33	19	20	20	28	18	21	53	143	1	1,183

NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905, BY MONTHS IN WHICH THE FIRST RECORDED AID FOR ANY YEAR WAS GIVEN.

Race.	Families to which first relief was given in the month of—													Total.
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Not reported.	
White	100	86	47	15	8	13	14	14	12	15	34	93	1	452
Negro	223	223	49	10	11	10	5	9	6	12	36	136	1	731
Total	323	309	96	25	19	23	19	23	18	27	70	229	2	1,183

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PERSISTENT CAUSES OF DISTRESS.

When determining what was the underlying or persistent cause or causes of a family's distress it was found necessary to reckon with a time element. In the case of a family where the records showed only one application for aid, or where the distress continued for only a short period of time, the dominant or persistent cause was of course not discernible. The records revealed a persistent cause only when the charity history extended through several years. When looking for the persistent cause, therefore, it became necessary to confine the search to those families whose charity career was of considerable duration.

In the following table it is seen that in 683 cases, for which reports were made as to the year in which relief was first given, the record went back of 1905. In 307 cases the family had been upon charity for five years or more; in 56 cases for ten years or more; in 13 cases for fifteen years or more, and in 3 cases for twenty years or more. In one case the year was not reported.

NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID IN 1905, BY YEAR IN WHICH AID WAS FIRST RECEIVED.

Race.	Number of families receiving relief in 1905.	Families receiving relief in 1905 who were first given relief in—											
		1905.	1904.	1903.	1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.
White	452	183	72	41	20	16	11	16	24	18	23	12	5
Colored	731	316	98	63	46	20	21	32	28	39	39	6	9
Total	1,183	499	170	104	66	36	32	48	52	57	62	18	14

Race.	Families receiving relief in 1905 who were first given relief in—											
	1893.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	Year not reported.
White	3	1	1	1	.....	1	.....	1	.....	1	1	1
Colored	5	1	.....	1	1	1	2	2	1	.....	.....	.....
Total	8	2	1	2	1	2	2	3	1	1	1	1

It was found convenient to classify the cases as temporary, intermittent, or permanent. When it is said that a case is temporary, it is meant that the records show no occasion of distress previous to the first application in 1905 and no further recourse to the Associated Charities for aid after the distress of that year was relieved. This does not mean, however, that in a temporary case there was only one act of relief, for many cases designated as temporary involved records

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extending over several months and showed that numerous doles were given. They were put down as temporary because they covered one definite season of distress and that not a very long one. Nor must it be thought that because a case was classified as temporary that the family was no longer a recipient of charity. In some cases temporary relief marked only a step on the road to the poorhouse. More often, however, it marked only a short period of misfortune and one that was safely tided over. A tailor with his wife and two small children drifted to Washington to search for work. Employment was not speedily found and the funds were exhausted. The wife applied to charity. Correspondence brought out the fact that the man's record was excellent. A former employer wrote that the applicant was a first-class workman, upright, sober, and anxious to work. The charity people helped him a little with provisions and secured him suitable employment, and that was the beginning and the end of his experience with charity. In the temporary case we sometimes get a glimpse of a family at the lowest ebb of its fortunes—just when it is in the trough of adversity. For example, a husband works at $5 a week while his wife earns what she can at the washtub. The combined earnings do not meet the demands of the family, and charity is sought. But at the very time of distress two boys large enough to work begin to earn something, and the family makes no further appeal for aid. Sometimes the temporary case marks simply a sharp short crisis in domestic affairs. A chief wage-earner deserts his family, leaving it penniless. At first there is nothing to do but to go to the charity office. When new adjustments have been made, however, and the wife and children have found employment, no further appeal for aid is made.

The immediate and contributing causes of distress in temporary cases are set forth in the following tables. It is seen that of all the charity cases more than one-third (415) mark only a fleeting period of adversity. The tables show, too, that the immediate causes of these temporary appeals to charity are mainly sickness and lack of employment, the distress in more than three-fourths of the cases being due to these two causes alone. Among the contributing causes of the temporary cases sickness still holds the lead, although desertion, intemperance, and licentiousness are much more conspicuous among the contributing than among the direct causes of temporary distress.

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NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID FOR TEMPORARY DISTRESS IN 1905, BY IMMEDIATE CAUSES OF DISTRESS.

Immediate cause.	White.		Negro.		Total.	
	Families.	Persons.	Families.	Persons.	Families.	Persons.
Accident	2	8	3	3	5	11
Accident to husband	4	20	8	31	12	51
Accident to wife			3	7	3	7
Desertion by husband	4	18	4	12	8	30
Incarceration	1	1			1	1
Incarceration of husband	1	2	2	2	3	4
Incarceration of widow			1	4	1	4
Insufficient earnings	7	30	16	82	23	112
Intemperance of husband	1	5			1	5
Lack of employment	60	229	80	279	140	508
Lameness of wife			1	3	1	3
Loss by fire	2	8	3	9	5	17
Loss of horse	1	4			1	4
Loss of money			1	2	1	2
Neglect by husband	1	6	2	11	3	17
Neglect of family by husband			1	3	1	3
Old age			9	10	9	10
Old age, blindness			1	2	1	2
Severe weather			2	8	2	8
Sickness	19	21	38	41	57	62
Sickness of child, pneumonia			1	7	1	7
Sickness of children	2	10	1	7	3	17
Sickness of daughter	1	6	3	7	4	13
Sickness of grandchild			1	5	1	5
Sickness of husband	20	96	35	118	55	214
Sickness of husband and wife	1	4	1	5	2	9
Sickness of mother			1	3	1	3
Sickness of mother, heart disease			1	4	1	4
Sickness of son, tuberculosis			1	7	1	7
Sickness of sons			2	6	2	6
Sickness of wife	8	26	51	155	59	181
Sickness of wife, la grippe			1	2	1	2
Sickness of wife, pneumonia			1	3	1	3
Sickness of woman	1	2	3	10	4	12
Sickness of woman, tonsilitis			1	3	1	3
Total	136	496	279	851	415	1,347

NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID FOR TEMPORARY DISTRESS IN 1905, BY CONTRIBUTING CAUSES OF DISTRESS.

Contributing cause.	White.		Negro.		Total.	
	Families.	Persons.	Families.	Persons.	Families.	Persons.
Accident			1	1	1	1
Accident to husband			2	9	2	9
Affliction of children			1	3	1	3
Blindness of husband	1	2	1	2	2	4
Childbirth			1	3	1	3
Death in family			1	6	1	6
Deformity of face			1	1	1	1
Desertion			3	7	3	7
Desertion by husband	4	15	15	49	19	64
Desertion by son-in-law	1	6			1	6
Disability of wife	1	3			1	3
Feeble-mindedness	1	1			1	1
Insufficiency of earnings	3	11	12	60	15	71
Intemperance	4	16			4	16
Intemperance and old age	1	4			1	4
Intemperance of husband	6	26	3	22	9	48
Lack of employment	2	7	5	13	7	20
Lack of employment of daughter			1	3	1	3
Lack of employment of wife	1	4	1	3	2	7
Lameness of husband			1	3	1	3
Lameness of sons			1	3	1	3
Lawlessness	1	1			1	1
Licentiousness	1	1	7	17	8	18
Licentiousness of daughter			2	8	2	8
Licentiousness of wife			1	2	1	2
Licentiousness of woman	1	2			1	2

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NUMBER OF WHITE AND OF NEGRO FAMILIES RECEIVING AID FOR TEMPORARY DISTRESS IN 1905, BY CONTRIBUTING CAUSES OF DISTRESS—Concluded.

Contributing cause.	White.		Negro.		Total.	
	Families.	Persons.	Families.	Persons.	Families.	Persons.
Loss of money	1	3	1	4	2	7
Maltreatment of employer	1	1			1	1
Morphine habit of wife	1	3			1	3
Neglect by children	2	10	8	15	10	25
Neglect by husband	1	5	3	9	4	14
Old age	6	12	17	30	23	42
Old age and lawlessness	1	1			1	1
Old age of mother			2	8	2	8
Partial blindness of daughter			1	5	1	5
Partial blindness of wife			1	3	1	3
Severe weather	8	36	19	47	27	83
Shiftlessness	4	13	4	15	8	28
Shiftlessness and intemperance			1	9	1	9
Shiftlessness of sons	1	3			1	3
Sickness	8	21	3	9	11	30
Sickness and intemperance			1	6	1	6
Sickness and severe weather			1	8	1	8
Sickness of aunt			1	5	1	5
Sickness of child	1	3			1	3
Sickness of daughter			6	18	6	18
Sickness of husband	1	4	4	13	5	17
Sickness of mother			1	5	1	5
Sickness of son	1	5	5	21	6	26
Sickness of wife	15	74	28	100	43	174
Sickness of wife and neglect by son			1	2	1	2
None apparent	55	202	107	293	162	495
Not reported	1	1	4	11	5	12
Total	136	496	279	851	415	1,347

The intermittent case is where the appeal for aid is made only at intervals, sometimes of long and sometimes of short duration. In many a family prosperity alternates with adversity. For example, a large family is mentioned, which, in its whole career, has enjoyed much of prosperity, but has not been able altogether to keep its name from the charity roll. In 1902 a cold snap drove it to the charity office. In 1904 the husband lost his job for several weeks and appeal for aid had to be made again. In 1905 a prolonged spell of sickness caused a third appeal to be made. The family tried hard to keep its head above water, but once in a long while it was unable to do so unaided. Sometimes an intermittent case shows a strange regularity in the recurrence of the date of application. In one case application was made and aid was given January 6, 1904, January 12, 1905, January 12, 1906, January 17, 1907. In another family aid was given January 20, 1905, February 21, 1906, February 5, 1907. In these cases coal was given each time, and the periodicity of the distress gave rise to a suspicion that the applicants were something of frauds, and that the charity office was visited merely because experience had taught that at about a certain time in the year a little fuel could be secured. Sometimes, in the intermittency of the distress, there can be read the varying fortunes of the family. A widow was left in 1892 with 7 children, the ages of the children being respectively 15, 13, 10, 7, 6, 5, 3. During the years 1892, 1893, 1894, and 1895 her applica-

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tions for relief were frequent. In 1896 they became less frequent and by 1899 they had ceased, not to begin again until 1905, when the sickness and death of one child and the loss of the wages of another brought the family again to charity. In this case it was plain that the applications for charity decreased in number as the children grew older and thus made an increase in the labor resources of the family. Frequently the charity record ends altogether when the children get large enough to bring in some money.

All cases that were neither temporary nor intermittent were classified as permanent. A permanent case differs from an intermittent case only in the continuity of the relief. Where aid was given right along, week after week for months and years, without serious break, the case was designated as permanent.

Where the relief was either permanent or intermittent, some dominant or persistent cause was usually discoverable. In the following table, where the persistent causes in both permanent and intermittent cases are given, it is seen that in 768 cases, or in nearly two-thirds of all, it was possible to assign a persistent or underlying cause of the poverty.

NUMBER OF FAMILIES RECEIVING PERMANENT OR INTERMITTENT AID IN 1905, BY PERSISTENT CAUSES OF DISTRESS.

Persistent cause	Permanent aid.		Intermittent aid.	
	Families.	Persons.	Families.	Persons.
Accident	2	3	4	16
Accident and sickness			1	8
Blindness	5	12	1	4
Criminality	1	10	1	2
Criminality and shiftlessness	2	4		
Desertion	9	38	54	194
Disability	3	11	4	15
Dishonesty and licentiousness	1	5		
Incarceration of husband			3	16
Injured arm			1	1
Insanity	1	2		
Insufficient wages	7	33	42	244
Insufficient wages and desertion			1	4
Insufficient wages and intemperance	1	9	1	8
Insufficient wages and licentiousness	1	4	1	5
Insufficient wages and mendicancy	1	9		
Insufficient wages and neglect	1	8		
Insufficient wages and old age	1	2	1	2
Insufficient wages and shiftlessness	1	9		
Insufficient wages and sickness	9	51	10	52
Intemperance	9	53	46	252
Intemperance and lack of employment			7	46
Intemperance and neglect			1	3
Intemperance and lawlessness			1	3
Intemperance and old age	2	5	1	1
Intemperance and shiftlessness	2	10	2	6
Intemperance and sickness			5	28
Lack of employment	3	13	47	226
Lack of employment and disability			1	5
Lack of employment and sickness	3	18	43	216
Lameness	1	1		
Licentiousness	10	38	2	5
Licentiousness and desertion			1	3
Lunacy			1	1

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NUMBER OF FAMILIES RECEIVING PERMANENT OR INTERMITTENT AID IN 1905, BY PERSISTENT CAUSES OF DISTRESS—Concluded.

Persistent cause.	Permanent aid.		Intermittent aid.	
	Families.	Persons.	Families.	Persons.
Mendicancy	3	18	1	3
Mental weakness			1	6
Neglect by natural supporters	2	6	10	43
Neglect and desertion			1	4
Not discoverable			3	13
Old age	37	50	64	113
Old age and mendicancy	1	2		
Old age and neglect by natural supporters	2	4		
Old age and shiftlessness	3	6		
Shiftlessness	19	80	63	262
Shiftlessness and desertion			1	5
Shiftlessness and feeble-mindedness	1	2		
Shiftlessness and lack of employment			2	19
Shiftlessness and lawlessness			2	9
Shiftlessness and licentiousness	1	4		
Shiftlessness and neglect by natural supporters			1	6
Sickness	59	238	88	287
Sickness and desertion	3	8	2	8
Sickness and neglect			1	4
Sickness and old age	10	19	18	47
Sickness and shiftlessness	2	10	4	16
Thievery			1	4
Unbalanced mind	1	1	1	1
No good cause shown			1	2
Total	220	796	548	2,218

In this list of deep-seated, persistent causes we find the non-financial or moral element figuring as it has figured in no previous comparison. It is true that sickness leads, as always, and lack of employment is responsible for much, but shiftlessness, desertion, intemperance, and licentiousness here answer for much more than has elsewhere been charged against them. As direct impelling causes of distress these moral, or as we might very well say, immoral, elements prevailed in hardly 5 per cent of all the cases; as contributory causes they prevailed in about 25 per cent of all the cases; but as the underlying cause of prolonged distress they prevail in a third of all the cases. As knowledge of a case becomes more comprehensive the greater does the relative importance of the moral element appear. A consideration, then, of the deeply seated causes of the poverty of these 768 families shows that in the final analysis the distress was due in one-third of the cases to moral elements, and in two-thirds of the cases to financial elements.(a) The poverty of charity recipients would therefore seem to present a problem that is something less than one-third moral and something more than two-thirds economic. This at least is the conclusion drawn from the charity records in Washington.

[a] In 49 cases the persistent cause was of a mixed nature containing both the financial and the moral elements. These were excluded in the above calculation.

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SUMMARY.

The results of the study may be summarized as follows:

Material aid, consisting of money, food, and clothing, was given in 1905 to 1,256 families in all. The charity records of 1,183 of these families were taken as the basis of this study. The number of persons in these 1,183 families was 4,365. These recipients constitute the floating, unattached, isolated poor of the city. This isolation is seen in the fact that of the 1,775 wage-earners among the recipients only 23 of the 81 who reported on the subject stated that they belonged to labor organizations, and in only 40 families was there evidence of membership in fraternal or beneficial societies.

The average size of the charity family is 3.7 persons, as against an average of 4.9 persons of the District of Columbia. Excluding that large class of charity families consisting of only 1 person or only 2 persons, the average of the charity family is brought up to 5, a normal average. The charity family therefore is neither much larger nor much smaller than the prosperous family.

The number of children under 16 in the charity families was 47.7 per cent of the charity population, whereas this class of children in the District of Columbia at large constituted only 26.6 per cent of the population. Children under 10 constitute 30.9 per cent of the population of the charity families, while of the total population of the District only 16.8 per cent were under 10 years of age. In the District the excess of females over males among children under 16 was 3.2 per cent; in the charity families the excess was 18.3 per cent. Among children 10 or under 16 the excess of females over males in the charity population was 21.8 per cent, and in the District the excess was only 8.1 per cent. So in the charity families the number of helpless children was relatively great, and the excess in the number of female children was strikingly large.

In 12 per cent of all the families there was desertion. Counting only the families in which the husband and wife were both living, there was desertion in nearly 20 per cent of the cases. Desertion was found in 13 per cent of the white families in which there were both a husband and wife, and in 24.4 per cent of the colored families. In nearly 30 per cent of all the families either the husband or the wife was dead, and in 37.5 per cent of all the cases the family was without a male supporter at its head. The charity family is therefore very often a fatherless family. Divorce does not prevail to any appreciable degree among the charity receiving families.

Of all the persons in the charity families 16 years of age or over, 77.2 per cent were employed in gainful occupations. In the 271 white families in which both husband and wife were at home both husband and wife were gainfully employed in 95 cases, and in the 291

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colored families having both a husband and a wife at home both husband and wife were employed in 222 cases. Extreme poverty has relatively a greater effect in drawing white married women into the ranks of wage-earners than it has in the case of colored married women. Of the children under 16 years of age in the charity families, 12 per cent were gainfully employed, a much larger percentage than obtained in the District at large.

On the charity roll many occupations are represented, although laborers, laundresses, and domestics comprised more than 60 per cent of all the chief wage-earners. Among the wage-earners in the families driven to charity were 27 carpenters, 25 painters, 10 plasterers, 9 clerks, 7 iron workers, 5 shoemakers, and 4 plumbers.

The actual earnings of a family receiving charity is a most difficult matter to determine, for at the time of charity seeking there is in most cases only financial chaos. In more than two-thirds of the families the wages of the chief wage-earner at the time of application had entirely ceased. In 80 families there was no wage-earner at all. Altogether three-fourths of the families were deprived of a regular breadwinner at the time of the application, a circumstance that prima facie at least indicates that the poverty of these poor is chiefly an economic or financial and not a moral problem.

In 78 families the chief wage-earner was earning the normal rate of wage at the time of application. In 269 cases the normal wage of the chief wage-earner was reported in dollars and cents. This normal daily wage varied from 8 cents a day to $5 a day. In over two-fifths of the families in which the normal wages were definitely known the rate of the male worker ranged from $1 to $2 per day, the wage most often not exceeding $1.50 per day. These workers were for the most part day laborers, some of them being employed on the streets of the city. In 206 of the families there was evidence of income additional to that derived from labor. In 43 cases pensions were received. With the exception of pensions the element of additional income was insignificant; when the regular earnings of the members of the family were cut off practically everything was gone.

Relief in 60 per cent of the cases consisted in giving food. Next to food, fuel was most frequently given. In nearly half the cases fuel was one of the articles given. The payment of rent does not figure largely in the relief extended, for the reason that the charity organization will seldom undertake to meet arrears in rent, and for the further reason that the applicants adopt the policy of getting the rent paid first and then going to the charity office for food and fuel. The real magnitude of the rent problem in the lives of these recipients is seen in the fact that 208 of the 1,183 families at some time and to some extent found arrears of rent associated with their appeal to charity. The chattel-mortgage loan figured in the distress of 26 families.

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In two-thirds of the families there was no marked delinquency whatever. Of the 394 families tainted with delinquency 174 were white and 220 colored, these numbers representing 38 per cent of the total white families and 30 per cent of the total colored families, respectively. The leading delinquencies were intemperance, desertion, licentiousness, neglect by natural supporters, lawlessness, thievery, and mendicancy. In nearly one-third of all the families in which delinquency was visible intemperance was the evil. In 96 cases the intemperance was in the white families and in 32 cases in colored families. Next to intemperance is the vice of desertion. In 102 cases desertion occurred in colored families and in 42 cases in white families. Licentiousness is third on the list of delinquencies. This vice was discoverable in 17 white families and in 47 colored families. The evidence supporting the charge of licentiousness consisted in part of the presence of illegitimate children, of whom there were 11 in white families and 68 in colored families. Neglect by natural supporters—not including cases of outright desertion—occurred in 12 white families and 31 colored families. Akin to delinquency, but not included among the delinquencies, was a certain reliance upon charity, a certain inclination to pauperism. This spirit of dependence cropped out in 69 families, 40 of which were white and 29 colored.

When considering the causes of the distress of the recipients it was found practicable to avoid using the terms "inefficiency," "ignorance," and "irregularity of employment" to denote causation. The subject of regularity and irregularity of employment, however, received careful attention, and it was found that of the 1,051 cases in which it was possible to characterize the employment of the chief wage-earner as regular or irregular, 919 were irregular.

In the discussion of causes the expression "financial element" is used to include one or several or all of the following elements of causation: Insufficient earnings, lack of employment, sickness, accident, old age, and severe weather. In 28 families (20 white, 8 colored) the financial element did not enter at all into the explanation of the causes of distress.

Among the immediate causes of distress—those that impinged directly on the consciousness of the applicant and hurried him to the charity office—sickness figured in nearly one-half of the families, rheumatism and tuberculosis leading all the other diseases. Next to sickness, lack of employment was the immediate cause of most distress, more than one-third of all the cases being assigned to this cause. Third in the list of immediate causes stands insufficient wages. In 81 families the wages were so low that the family could not live upon the earnings, even though the full wage was being received at the time of the application. In 55 cases the immediate cause of distress was

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due to accident. Illustrations of the circumstances attending these accidents show plainly enough the need of a liberal liability law. In 49 cases old age was the direct cause of the appeal to charity.

Sickness, lack of employment, insufficient wages, accident, and old age constituted 94 per cent of all direct causes. That is to say, in nineteen cases out of twenty the impelling cause of the application is directly referable to a financial factor.

In the immediate causes of 329 cases could be seen a full explanation of the distress. In 854 the immediate cause was supplemented by a contributory cause. As contributory causes sickness, insufficient earnings, lack of employment, and accident figure very much less than they did as immediate causes, while desertion, intemperance, and neglect by natural supporters figured very much more. Among the contributory causes there appear also certain causes that did not appear among the direct causes, such as licentiousness, shiftlessness, mendicancy, thievery. While the immediate causes were in the vast majority of cases due to financial adversity, the undercurrent of distress was strongly colored with moral delinquency—desertion, intemperance, licentiousness, neglect by natural supporters, mendicancy, and thievery constituting about 25 per cent of all the contributory forces. In 55 families the controlling cause of distress was put down as shiftlessness, a fault that was regarded as consisting in a failure to make the best of opportunities. In 79 cases severe weather operated as a contributing cause.

When studying the subject of underlying or persisting causes, it was convenient to classify the cases as temporary, intermittent, or permanent. More than one-third of the cases were found to be temporary, and in these, of course, no deep-seated cause was discernible. In 768 cases it was possible to assign a persistent or underlying cause of the poverty. Here the nonfinancial or moral element figured much more prominently than in any previous comparison. As direct impelling causes shiftlessness, desertion, intemperance, and licentiousness had to answer for hardly 5 per cent of all the cases. As contributory causes they prevailed in about 25 per cent of all the cases, but as the underlying cause of prolonged distress they prevailed in one-third of all the cases.

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RECENT REPORTS OF STATE BUREAUS OF LABOR STATISTICS.

MAINE.

Twenty-first Annual Report of the Bureau of Industrial and Labor Statistics for the State of Maine, 1907. Thomas J. Lyons, Commissioner. 520 pp.

The following subjects pertaining to the labor interests of the State are presented in this report: Factories, mills, and shops built during 1907, 4 pages; labor unions, 95 pages; women and children in sardine factories, 17 pages; women wage-workers of Portland, 30 pages; school-teachers, 121 pages; opportunities for new industries, 172 pages; labor laws, 32 pages; report of the inspector of factories, workshops, mines, and quarries, 5 pages.

FACTORIES, MILLS, AND SHOPS BUILT.—Returns show that in 1907 in 95 towns 133 buildings were erected or enlarged, remodeled, etc., at a total cost of $4,140,960. These improvements provided for 3,566 additional employees. A summary of improvements of this character is presented for the ten years 1898 to 1907:

FACTORIES, MILLS, AND SHOPS BUILT OR ENLARGED, ETC., DURING THE TEN YEARS 1898 TO 1907.

Year.	Number of towns.	Number of buildings.	Aggregate cost.	New employees.
1898	64	72	$675,100	2,024
1899	103	138	6,800,700	4,990
1900	114	167	2,174,825	5,539
1901	94	121	5,638,200	6,337
1902	91	129	2,776,630	5,017
1903	96	124	1,436,900	3,343
1904	91	113	1,175,500	3,276
1905	93	114	2,303,410	3,329
1906	104	131	2,637,500	3,674
1907	95	133	4,140,960	3,566

LABOR UNIONS.—Under this title is given a list of all federations and unions reporting, together with the addresses of the secretaries. There were 2 state and 11 central federations and 225 local unions in 68 cities, towns, and plantations. Of the local unions known to exist in 1907, 4 failed to report membership and 5 sent no report. The reports from the unions give, by cities and towns, the date of organization, membership, qualifications for membership, initiation fees, dues, benefits allowed, hours of labor, rates of wages, etc.

The 215 local unions reporting comprised an aggregate membership of 16,804. Compared with 1906, a net gain of 10 unions is shown and

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a gain in reported membership of 2,032. There were 117 unions which reported that they were working under trade agreements with employers and 100 which were not.

To the question, "What have you accomplished for labor by organization?" a wide range of replies was returned by the unions; but a majority of them asserted that higher wages and a shorter workday, as well as improved working conditions and social benefits, had been gained. To the question, "Do nonunion men enjoy the same conditions as to labor, wages, and steady employment as union men?" 172 unions made reply, 69 indicating that nonunion men enjoy equal conditions with union men and 103 that they do not.

Under this chapter is also given historical sketches of the Granite Cutters' International Association of America and the Lobster Fishermen's National Protective Association (national organizations originating in Maine), together with an account of the labor demands and differences occurring in the State during the year.

WOMEN AND CHILDREN IN SARDINE FACTORIES.—This chapter is devoted to the industrial conditions surrounding the women and children employed in the sardine packing factories of Washington County, the principal center of the industry. The pounds of sardines packed in the State in 1905 amounted to 86,218,610, or 98.8 per cent of the total pounds for the United States, and were valued at $4,291,324. The report briefly describes the workings of the various stages of the industry in addition to considering living expenses, wages, and hours of employment, the irregular nature of the work (as everything depends upon "the catch"), and other employment available when the packing season closes. The 30 sardine factories within the towns of Eastport and Lubec employed in the canning of fish during the 1906 season over 1,600 women and children. Of this number about two hundred were children of various ages, one-half of whom were probably under 14 years of age. The work is mostly paid for by the piece.

WOMEN WAGE-WORKERS OF PORTLAND.—The purpose of this report is to present facts pertaining to the lines of work in which women are numerously employed in the city of Portland, together with figures showing the average financial returns and the cost of living, and an account of representative societies which are the outgrowth of existing business and industrial conditions. All occupations, both of an industrial and clerical nature, in which women are employed are considered, the number of women finding employment in each, with the weekly wages paid, being given. For most of the industrial occupations hours of labor are also given. According to the United States census of 1900 there were employed in the city of Portland 5,531 women wage-earners. During the years since then the number has largely increased. Tenement houses, child labor, and night

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schools are also given consideration in addition to the welfare work of various establishments of the city and of different societies and organizations.

SCHOOL TEACHERS.—This presentation consists of letters, arranged by counties, from school superintendents and school teachers throughout the State giving personal expression respecting existing conditions in the public schools and the necessity for higher salaries than are at present paid, especially in the rural and village schools. In addition, there are given compilations of 1,100 returns from rural and village teachers, out of over 1,600 returns which were received from teachers of all grades. These 1,100 returns from teachers are grouped, by counties, in four classes—rural schools taught by female teachers with no normal training and with normal training; village schools taught by female teachers with no normal training and with normal training—and give statistics as to salaries, living expenses, length of school year, number of years they had been engaged in teaching, number of years they had attended high schools or academies, etc. These returns are summarized in the statement which follows:

STATISTICS OF TEACHERS IN RURAL AND IN VILLAGE SCHOOLS.

Items.	Female teachers, with no normal training, in—		Female teachers, with normal training, in—	
	Rural schools.	Village schools.	Rural schools.	Village schools.
Number of teachers	464	222	210	204
Average length of school year	29 wks., 1 da.	31 wks., 4 da.	29 wks., 0 da.	32 wks. 3 da.
Average weekly wages	$6.70	$8.94	$7.21	$9.71
Average gross salary	$196.21	$284.29	$209.09	$316.55
Average weekly cost of board	$2.20	$3.06	$2.31	$3.29
Average cost of board for school year	$64.24	$97.31	$66.99	$106.25
Average incidental expenses	$16.81	$25.95	$16.14	$24.56
Average net salary	$115.16	$161.03	$125.96	$185.74
Average weekly income on the basis of 52 weeks in the year	$3.77	$5.47	$4.02	$6.09

Of the 1,100 teachers in rural and village schools, both with and without normal training, 559, or 50.8 per cent, remained at home during vacations, and 541, or 49.2 per cent, supplemented their incomes by other gainful occupations. Of the 541 at work, 283, or 52.3 per cent, were engaged in hotel and house work, and 258, or 47.7 per cent, in other avocations.

OPPORTUNITIES FOR NEW INDUSTRIES.—This presentation, which is arranged by counties, towns, and plantations, is designed to show as far as possible the nature and extent of the industrial opportunities of the State as yet undeveloped and the advantages each town has to offer in the way of new business openings. There is also given the number of towns which contain a good supply of various specified natural products, together with a list of the industries

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wanted, or those best suited to the several towns, which are named under each industry.

LABOR LAWS.—This section of the report reproduces the labor laws of the State, compiled from the Revised Statutes for 1903 and from the public laws of 1905 and 1907.

CHILD LABOR.—In the report on factory inspection a table is presented in which it is shown that the number of children working under certificates in certain manufacturing establishments of the State was 877 in 1906 and 1,111 in 1907. The legislature in 1907 made some changes in the law regulating the employment of children in manufacturing and mechanical establishments, the most important of which was fixing the age limit at 14 years, with no chances of excuse coming from any source. Also, the form of the employment certificate was changed.

MICHIGAN.

Twenty-fifth Annual Report of the Bureau of Labor and Industrial Statistics, including the Fifteenth Annual Report of State Inspection of Factories. 1908. Malcolm J. McLeod, Commissioner. xxi, 539 pp.

This report contains 19 chapters, of which Chapters I to IX, 325 pages, are devoted to inspection of factories, stores, hotels, tenement shops, etc. Labor and industrial statistics are presented in Chapters X to XIX under the following titles: Technical papers, 28 pages; report of the state commissioner of labor to the International Association of Factory Inspectors, 5 pages; labor disagreements, 1907, 9 pages; statistics of penal and reformatory institutions, 16 pages; miscellaneous industries, 19 pages; beet-sugar and Portland-cement industries, 13 pages; the coal industry, 21 pages; furniture, boot and shoe, corset, and refrigerator industries, 19 pages; free employment bureaus, 22 pages; statistics of electric railways and of the motive power used in manufacturing in Michigan, 17 pages; laws coming under the jurisdiction of the state bureau of labor, 30 pages.

TECHNICAL PAPERS—Under this title two papers are presented. The first paper, "What our labor laws need to make us proud," discusses in reference to the state child labor, legislation affecting working women, guarding of dangerous machinery, mining laws, factory inspectors, employment bureaus, etc. The second paper deals with the subject "Cost of living, wages, and rising prices." Comparisons are made between the years 1907 and 1902, and also between earlier years, of income and expenditure that enter into the living of the average workingman's family. The cause of rising prices is attributed, by the author of the paper, to the increase in the world's output of gold rather than to the influence of trusts.

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LABOR DISAGREEMENTS, 1907.—The report of the work of the state court of mediation and arbitration for the year 1907 in dealing with 11 labor disagreements is given in this chapter.

PENAL AND REFORMATORY INSTITUTIONS.—Under this title appear the reports of the wardens and superintendents of these institutions. Tables are given showing the number of officials and salary of each, number of inmates, cost of clothing, and feeding of inmates, number of inmates employed at contract labor, rate per day of contract labor, and hours of labor, and number of inmates employed in systems of labor other than contract.

MISCELLANEOUS INDUSTRIES.—The statistical information contained in this chapter is reproduced from the reports of the United States Census Bureau, and covers 15 industries of the State. In addition to data for 1905, the presentation gives for 10 of the 15 industries comparative figures for 1900.

BEET SUGAR AND PORTLAND CEMENT INDUSTRIES.—In the beet-sugar industry 16 factories were in operation during the year 1907, the same number as in 1906. These 16 factories represented a total cost of $10,700,000. The acreage devoted to beet raising in 1907 was 99,586, an increase over 1906 of 3,069 acres. The tons of beets grown in 1907 were estimated at 723,880, and the pounds of sugar made at 165,074,900. There were 1,495 skilled laborers and 2,306 other laborers employed in the factories, with an average daily wage of $2.93 for the former, and of $1.86 for the latter.

In the cement industry 15 of the 17 plants in the State were in operation at the time of the investigation. The aggregate cost of the plants in operation was $8,320,000, and their aggregate daily capacity 19,160 barrels. The output for 1907 was 3,644,473 barrels. There were on the pay rolls 609 skilled laborers, at an average daily wage of $2.84, and 1,253 other laborers, at an average daily wage of $1.85. The average daily wage of all employees was $2.17, and the annual wage pay roll amounted to $1,365,960.

THE COAL INDUSTRY.—In this industry there were 34 coal mines in operation during the year 1907, as compared with 38 mines during the year 1906. A condensed summary of the operations of the mines for the two years is presented in the following table:

COAL MINE STATISTICS, 1906 AND 1907.

Items.	Year.	
	1906.	1907.
Mines in operation	38	34
Average number of employees	2,119	2,881
Average hours worked per day	7.8	8
Average days worked per month	22.3	20.4
Average daily wages	$2.40	$3.24
Tons of coal mined	1,372,854	1,898,426
Average cost of mining per ton	$1.50	$1.64½

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A personal canvass was made of 2,023 miners, employed in 24 mines, of which 1,300 were married and 723 were single. There were 1,138 of the miners who had 5,051 others besides themselves to support. The average daily wages of the miners canvassed was $3.11. As to nationality, 50 per cent of the miners were American or English born; those foreign born had lived in the United States an average of 22½ years.

In 19 mines 54 accidents were reported—7 fatal, 7 serious, 27 severe, and 13 slight.

FURNITURE, BOOT AND SHOE, CORSET, AND REFRIGERATOR INDUSTRIES.—These four industries were the subjects of a special canvass made in 1907.

In the investigation of the furniture industry 150 establishments (in 40 towns) were visited, the establishments representing an invested capital of $13,802,402. They employed 16,310 adult males, at an average daily wage of $1.92; 513 adult females, at an average daily wage of $1.40; 542 boys between 14 and 16 years of age, at an average daily wage of $1.10; and 61 girls between 14 and 16 years of age, at an average daily wage of $0.80. The cost of material used by the factories aggregated $11,801,370 and the value of product $26,662,414.

Seventeen establishments engaged in the manufacture of shoes (in 11 towns) were canvassed, the establishments representing an invested capital of $1,901,400. They employed 1,413 adult males, at an average daily wage of $1.85; 815 adult females, at an average daily wage of $1.18; 126 boys between 14 and 16 years of age, at an average daily wage of $0.84; and 111 girls between 14 and 16 years of age, at an average daily wage of $0.67. The cost of material used aggregated $3,176,945 and the value of the product $6,176,771.

Seven establishments engaged in the manufacture of corsets (in 4 towns) were canvassed. They employed 257 adult males, at an average daily wage of $2.25, and 1,081 adult females and 176 females under 16 years of age, at an average daily wage of $1.10. The cost of material used aggregated $1,225,500 and the value of product $2,457,880.

Ten establishments engaged in the manufacture of refrigerators (in 9 towns) were canvassed. They employed 1,596 adult males, at an average daily wage of $1.69, and (in 5 factories) 58 boys under 16 years of age, at an average daily wage of $0.92. The cost of material used aggregated $1,483,126 and the estimated value of product $2,739,662.

FREE EMPLOYMENT BUREAUS.—Under this title is presented a detailed report of the work done in the four free employment bureaus of the State. Two of the bureaus (one at Saginaw and one at Kalamazoo) were opened during 1907. The following table summarizes

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the work done at the Detroit and Grand Rapids bureaus for the year ending November 30, 1907, at the Saginaw bureau for the period July 19 to November 30, 1907, and at the Kalamazoo bureau for the period August 7 to November 30, 1907:

OPERATIONS OF FREE PUBLIC EMPLOYMENT OFFICES.

City.	Situations wanted.		Help wanted.		Positions secured.	
	Males.	Females.	Males.	Females.	Males.	Females.
Detroit	9,831	1,581	10,363	2,007	9,831	1,581
Grand Rapids	4,172	2,553	3,933	3,202	3,465	2,346
Saginaw	1,234	294	1,510	406	878	214
Kalamazoo	800	259	452	267	379	140
Total	16,037	4,687	16,258	5,882	14,553	4,281

ELECTRIC RAILWAYS.—In 1907 there were 23 electric railways in Michigan, with a total invested capital of $38,031,000, and paying in wages to 6,534 employees the sum of $4,692,762. The statement following gives the number of employees connected with these railways, together with their average daily wages and daily hours of work:

NUMBER, HOURS OF LABOR, AND DAILY WAGES OF ELECTRIC RAILWAY EMPLOYEES, 1907.

Occupation.	Number of employees.	Average daily hours of labor.	Average daily wages.
Division superintendents	16	.....	$3.55
Assistant division superintendents	24	.....	2.59
Foremen	71	.....	2.35
Office employees	324	9	1.66½
Conductors	1,405	9½	2.21
Motormen	1,399	10	2.20½
Electricians	90	10	2.28
Engineers	43	10½	2.94
Firemen	74	10	1.96
Oilers	44	11	2.11
Linemen	75	10½	2.22
Motor inspectors	148	10	2.07
Machinists	38	10	2.42
Carpenters	99	9	2.28
Painters	55	10	2.15
Car-house men	210	10½	1.73
Track laborers	2,280	10	1.74½
Other employees	139	10	1.52

POWER USED IN MANUFACTURING IN MICHIGAN.—Of the 8,335 manufacturing establishments embraced in this presentation 3,327 used steam power, 1,478 used electric power, 924 used gas or gasoline power, 270 used water power, 372 used rented power (kind not reported), and 1,964 establishments required no power to operate. The total power generated in the 6,371 power-using establishments was 906,979 horsepower. Also, statistics are given of steam boilers and their equipment and kind of alarms in use and their condition. The data in detail are presented by counties.

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NEW JERSEY.

Thirteenth Annual Report of the Bureau of Statistics of Labor and Industries of New Jersey, for the year ending October 31, 1907. Winton C. Garrison, Chief. xiv, 675 pp.

This report consists of 4 parts, in which the following subjects are presented: Statistics of manufactures, 123 pages; steam railroads, 12 pages; cost of living, 17 pages; fruit and vegetable canning, 10 pages; New Jersey as a manufacturing State, 33 pages; economic changes in the building trades of Essex County, 60 pages; historical review of the bureau of statistics of labor and industries, 40 pages; industrial chronology, 369 pages.

STATISTICS OF MANUFACTURES.—This presentation of the statistics of manufactures is based on returns for the year 1906, secured from 2,120 establishments, 2,039 representing 88 specified industries and 81 grouped as unclassified. None of the establishments considered employed fewer than 10 persons or had an invested capital of less than $5,000. The facts are set out in ten tables, which show by industries character of establishment management (whether corporate or private), amount of capital and the various forms in which it is invested, value of stock or materials used and of goods produced, number of wage-earners (men and women, and children under 16 years of age) and wages and earnings, days in operation during the year and hours worked per day and per week, percentage of business done of total productive capacity, and character and measure of power used.

The returns show that of the 2,120 establishments reporting 1,326 (in 1,321 of which were 71,876 stockholders) were under the corporate form of ownership and management and 794 (with 1,407 partners and proprietors) were owned and managed by partnerships and private individuals. Capital invested (by 2,113 establishments) showed an aggregate of $579,705,607, value of materials or stock used (by 2,115 establishments) an aggregate of $428,030,730, and value of products or goods made (by 2,111 establishments) an aggregate of $705,489,666. The total paid out in wages amounted to $131,587,332. During the year there was an average of 260,072 wage-earners employed, 191,208 males 16 years of age or over, 62,189 females 16 years of age or over, and 6,675 children under 16 years of age. Under normal conditions the average number of hours worked per day in the 2,120 establishments was 9.58, and the average number of hours worked per week 55.32. The average number of days in operation during the year was 289.02, and the average proportion of business done of total productive capacity was 78.22 per cent.

The table following presents the number and per cent of males and females 16 years of age or over and of children under 16 years

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of age employed in 1906 in all industries (2,120 establishments) at each specified weekly rate of wages:

NUMBER AND PER CENT OF MALES AND FEMALES 16 YEARS OF AGE OR OVER AND OF CHILDREN UNDER 16 YEARS OF AGE IN ALL INDUSTRIES (2,120 ESTABLISHMENTS), RECEIVING EACH CLASSIFIED WEEKLY RATE OF WAGES, 1906.

Classified weekly wages.	Number.				Per cent.			
	Males 16 years of age or over.	Females 16 years of age or over.	Children under 16 years of age.	Total.	Males 16 years of age or over.	Females 16 years of age or over.	Children under 16 years of age.	Total.
Under $3	1,212	1,712	1,028	3,952	0.6	2.6	14.3	1.4
$3 or under $4	3,224	4,565	3,128	10,917	1.5	6.8	43.6	3.8
$4 or under $5	6,004	10,146	2,088	18,238	2.8	15.2	29.1	6.3
$5 or under $6	7,183	12,603	731	20,517	3.4	18.9	10.2	7.1
$6 or under $7	8,675	12,088	158	20,921	4.0	18.1	2.2	7.3
$7 or under $8	12,800	8,761	36	21,597	6.0	13.1	.5	7.5
$8 or under $9	18,380	5,673	10	24,063	8.6	8.5	.1	8.4
$9 or under $10	31,528	4,309	.....	35,837	14.7	6.5	.....	12.5
$10 or under $12	33,541	3,917	.....	37,458	15.7	5.9	.....	13.0
$12 or under $15	34,838	2,280	.....	37,118	16.3	3.4	.....	12.9
$15 or under $20	38,312	564	.....	38,876	17.9	.9	.....	13.5
$20 or under $25	11,240	87	.....	11,327	5.2	.1	.....	3.9
$25 or over	6,977	11	.....	6,938	3.3	.....	.....	2.4
Total	213,914	66,716	7,179	287,809	100.0	100.0	100.0	100.0

The following comparative table shows for selected industries, for the years 1905 and 1906, the average number of persons employed per industry and the average yearly earnings per employee:

AVERAGE NUMBER OF EMPLOYEES PER INDUSTRY AND AVERAGE YEARLY EARNINGS PER EMPLOYEE, 1905 AND 1906, BY INDUSTRIES.

Industry.	Average employees per industry.		Average yearly earnings per employee.	
	1905.	1906.	1905.	1906.
Artisans' tools	2,037	2,445	$543.17	$585.24
Boilers, steam	2,249	1,996	472.18	629.14
Brewery products	1,964	2,065	894.37	898.31
Brick and terra cotta	6,742	7,419	448.40	469.02
Chemical products	6,546	6,839	487.49	513.49
Cigars and tobacco	7,223	8,376	316.70	294.78
Drawn wire and wire cloth	.....	1,867	541.00	596.21
Electrical appliances	5,462	6,739	510.23	519.52
Furnaces, ranges, and heaters	1,885	1,915	659.50	686.32
Glass, window and bottle	6,263	6,190	539.97	569.60
Hats, men's	5,563	5,832	586.47	581.53
Jewelry	3,091	3,482	645.97	682.31
Leather, tanning and finishing	5,616	5,722	523.60	617.59
Lamps, electric and other	2,042	2,317	401.71	433.75
Machinery	19,154	24,393	599.06	631.37
Metal goods	5,654	6,751	471.95	450.45
Oils	3,683	3,753	635.67	644.10
Paper	2,287	2,419	497.34	502.27
Pottery	4,646	4,833	593.91	629.95
Rubber products, hard and soft	5,761	6,280	480.11	499.76
Shipbuilding	3,523	3,822	568.89	677.56
Silk goods, broad and ribbon	22,456	21,543	438.54	434.72
Steel and iron, structural	3,295	3,429	596.08	627.34
Steel and iron, forging	2,569	2,882	615.10	649.35
Woolen and worsted goods	8,531	8,965	373.43	385.30
Twenty-five industries	138,242	152,274	511.06	534.42
Other industries	100,871	107,798	456.58	465.76
All industries	239,113	260,072	488.49	505.96

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STEAM RAILROADS.—For the year ending June 30, 1907, the 7 railroads in the State employed 45,810 persons for an average of 292 days per person, each working an average of 10.6 hours per day. The total paid in wages amounted to $28,987,303, the average wages per day being $2.17 and the average yearly earnings per employee $632.99. Five of the companies reported the number of employees injured during the year as 1,567, the injuries of 90 resulting in death.

COST OF LIVING.—This is a continuation of the presentation of previous years, and shows the retail prices of 50 items of food and 2 other commodities (common soap and kerosene oil) in the principal markets in all counties of the State in the month of June, 1907. Comparisons with retail prices in 1906 and in 1898 (the year the investigation was begun) are also given. Taking the list of commodities together, the prices in 1907 as compared with the prices in 1906 show an increase of 9.7 per cent, which is the largest increase in the cost of living shown by the records of any one year since the annual cost of living inquiry was begun, in 1898. The total net increase, however, was largely due to advances in the price of first and second quality flour per 25-pound bag and in the price of new and old potatoes per bushel. Apart from these 4 items the remaining 46 articles of food show an advance in 1907, as compared with 1906, of only 2.9 per cent.

FRUIT AND VEGETABLE CANNING.—In 1906 there were 44 canneries from which returns were received. Invested capital to the amount of $920,045 and wages paid to the amount of $341,883 were reported by the canneries. The 44 canneries gave employment to 4,865 wage-earners—2,121 males and 2,744 females. The selling value of the product amounted to $1,581,418.

NEW JERSEY AS A MANUFACTURING STATE.—A brief historical review of the growth of the manufacturing industries of the State for the fifty-five-year period 1850 to 1905 is presented in this section. The capital invested in manufactures in 1850 was $22,293,258, as contrasted with $715,060,174 in 1905; the number of wage-earners in 1850 was 37,830, as contrasted with 266,336 in 1905; the amount paid in wages in 1850 was $9,364,740, as contrasted with $128,168,801 in 1905, and the total value of the manufactured product in 1850 was $39,851,256, as contrasted with $774,369,025 in 1905.

ECONOMIC CHANGES IN THE BUILDING TRADES.—The purpose of this inquiry was to ascertain what changes had taken place in wages and working hours during the period between the years 1896 and 1906, and incidentally how far rents for the different classes of buildings had been affected thereby. The field of inquiry was limited to Essex County, and the information presented was derived entirely from statements made by employers who had been in business, with but one exception, for periods ranging from 8 to 40 years. The trades or occupations considered are 15 in number. The questions

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submitted were designed to bring out the fullest information possible relating to the comparatively new form of business organization that has resulted from the almost complete unionization of the building trades.

Relative to rents, the inquiry led to the conclusion that, fundamentally, the general advance may be safely said to be due to the general and widely diffused prosperity of recent years, which has created a desire for better homes, the supply of which, partly by reason of large increases in the cost of land, material, and labor, has not as yet been sufficient to meet the demand. These circumstances, together with a rapidly growing population competing for homes, account fully for the advance in rents.

Bureau of Statistics of Labor and Industries.—Under this title is presented a historical review of the work of the various state bureaus of labor statistics, with special reference to and detail of that of the New Jersey bureau, which has had an organization for thirty years.

Industrial Chronology.—This record is for the year ending September 30, 1907. During the period there were 581 corporations organized in the State for industrial purposes, having an aggregate capitalization of $88,750,500; 165 new buildings were erected and equipped for manufacturing purposes and 156 old plants more or less enlarged; 10 manufacturing plants were moved into New Jersey from other States (6 from New York and 4 from Pennsylvania); 18 manufacturing plants were permanently closed and 35 closed for a period ranging from two weeks to one month or over; 117 plants suffered from fire, some being totally destroyed, the losses of 108 reporting that item amounting to $2,217,717, all but a small part of which was covered by insurance; there were 149 instances in which employees received an increase in wages (ranging from 2½ to 15 per cent), and 4 firms reduced the hours of weekly labor (five hours in 2 cases and three hours in 2 cases); 1,898 wage-earners (440 being railroad employees) were injured while at work, of which number 425 (180 being railroad employees) died from the injuries received; 162 strikes of greater or less duration occurred, 84 being for increase in wages, 4 for reduction of working hours, 12 for increase of wages and reduction of working hours combined, 11 against the employment of non-union men, 7 for the reinstatement of discharged union men, and the remainder for various other causes. There were 34 new labor unions organized during the chronological period covered. In addition to these there was 1 organization of women formed for the purpose of assisting, as far as possible, all labor unions and the members thereof by pledging themselves to buy only such goods as are the products of union labor and to prevail upon their friends to do likewise.

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OHIO.

Thirty-first Annual Report of the Bureau of Labor Statistics of the State of Ohio, for the year 1907. M. D. Ratchford, Commissioner. 523 pp.

This report consists of four parts in which are presented the following subjects: Laws governing the bureau, laws to license and regulate private employment agencies, and recent court decisions, 13 pages; manufactures, 444 pages; coal mining, 20 pages; free public employment offices, 18 pages; chronology of labor bureaus, 3 pages.

MANUFACTURES.—Tables are given for 1906, showing, by industries, for each of the five principal cities, the remaining cities and villages, and totals for the State, the number of establishments reported, capital invested, value of goods manufactured, amount paid for rent, taxes, and insurance, total amount paid in wages, number and monthly pay of salaried employees, number of male and of female wage-earners, number employed by occupations, and average number of days worked, average daily wages, average yearly earnings, and average hours of daily labor. Other tables show, by industries, the number in each occupation affected by a change of wages during the year.

The 9,337 establishments from which returns were received for 1906 reported an invested capital of $494,559,455, and goods produced or manufactured to the value of $1,008,535,149.22. Wages paid 358,292 males and 66,140 females, or a total of 424,432 wage-earners, aggregated $219,039,431.58, and salaries aggregating $44,240,675.16 were paid to 38,878 persons employed as superintendents, office help, etc. During the year 113,014 employees received an average increase in wages of 8.7 per cent, and 8,702 employees suffered an average reduction in wages of 5.2 per cent.

The number of establishments reporting in 1906 was 823 more than in 1905, the value of manufactured products was $134,836,655.62 more than that of 1905, and the amount paid in wages during the year was increased by $29,062,032.35. The aggregate invested capital exceeded that reported for 1905 by $44,857,267, and the salaries paid superintendents, office help, etc., showed an increase of $5,732,229.

COAL MINING.—Tables are given, by counties, showing number of mines reporting, average number of employees, capital invested, value of production, wages and salaries paid, average daily wages, average yearly earnings, average days worked, average hours of daily labor, number in each occupation affected by a change of wages during the year, etc. The following comparative table presents a summary of mining statistics for the years 1905 and 1906:

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STATISTICS OF COAL MINING, 1905 AND 1906.

Items.	1905.	1906.	Increase (+) or decrease (−).
Number of mines reporting	587	574	− 13
Number of employees	[a] 37,673	[b] 42,080	+ 4,407
Number of salaried employees	970	953	− 17
Invested capital	$36,630,252.00	$35,761,855.00	− $868,397.00
Value of product	$24,986,266.90	$26,864,427.70	+$1,878,160.80
Amount paid for rent, taxes, and insurance	$610,508.94	$611,116.79	+ $607.85
Amount paid in wages	$18,872,894.72	$19,467,843.63	+ $594,948.91
Amount paid in salaries	$973,388.40	$989,840.76	+ $16,452.36
Average days worked per employee	173	171	− 2
Average daily wages per employee	$2.48	$2.61	+ $0.13
Average yearly earnings per employee	$429.04	$446.31	+ $17.27
Average hours of daily work	8	8	.....
Number affected by advance in wages	164	40,634	+ 40,470
Number affected by reduction in wages	2	.....	− 2
Average per cent advance in wages	8.9	5.7	− 3.2
Average per cent reduction in wages	13.2	.....	− 13.2

[a] Average for the year, taken from monthly returns.
[b] Number for the year, taken from yearly returns.

FREE PUBLIC EMPLOYMENT OFFICES.—In addition to a text report and an itemized statement of the expenses of each of the five offices for the year ending October 31, 1907, tables are given showing, by years, the results of the operations of each office from date of organization, and for each week of the period October 26, 1906, to October 31, 1907.

The following table shows the operations of the five free public employment offices of the State for the period October 26, 1906, to October 31, 1907:

OPERATIONS OF FREE PUBLIC EMPLOYMENT OFFICES, OCTOBER 26, 1906, TO OCTOBER 31, 1907.

City.	Situations wanted.		Help wanted.		Positions secured.	
	Males.	Females.	Males.	Females.	Males.	Females.
Cleveland	4,935	3,274	6,894	4,370	4,703	3,151
Columbus	2,462	2,442	4,863	3,605	2,353	2,364
Cincinnati	4,030	1,989	3,724	2,266	3,661	1,679
Dayton	4,215	2,778	4,211	5,146	3,720	2,719
Toledo	3,223	1,782	4,850	2,220	2,767	1,425
Total	18,865	12,265	24,542	17,607	17,204	11,338

Since the organization in 1890 of the five free public employment offices there has been a total of 464,109 applications for situations wanted, 434,396 applications for help wanted, and 292,627 positions secured. Of applications for situations 63.1 per cent were filled, and of applications for help 67.3 per cent were filled.

The expenses of the five offices for the year ending October 31, 1907 (excluding salaries), were $2,292.90, of which the expenses of the Cleveland office were $507.37, the Columbus office $340.78, the Cincinnati office $507.05, the Dayton office $511.67, and the Toledo office $426.03.

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RECENT FOREIGN STATISTICAL PUBLICATIONS.

CHILE.

La Oficina de Estadistica del Trabajo. Ministerio de Industria i Obras Publicas. 75 pp.

The Chilean ministry of industry and public works publishes in this report an account of the creation and initiatory work of the office for the collection of labor statistics, which has recently been organized as a branch of that executive department. The pamphlet comprises three chapters, the first of which is devoted to a consideration of the disturbed economic and industrial conditions resulting from the earthquake of August 16, 1906, which occasioned a considerable advance in the cost of living and a general scarcity of labor due to the greatly increased activity in the building industry following that catastrophe. The chapter also enumerates the various measures employed by the minister of industry and public works in furtherance of his plan for the organization of a bureau of labor statistics, and includes the draft of a law providing for such an office, which was submitted to the Chilean Congress on January 16, 1907, but upon which no action was taken.

The second chapter gives an account of the creation by ministerial decree of April 5, 1907, of a bureau within the ministry of industry and public works with the following functions, the task of organization being delegated to the chief of the division of agricultural statistics:

To collect, classify, and publish information relating to labor, particularly that employed in industrial establishments; to inquire into the number and class of operatives employed in each industry and the number and class of those whom the development of each industry would require; to ascertain the wages paid to workingmen, estimated by the day and by the hour; to collect information in regard to accidents to labor; to study the length of the working day and the general condition of employment; to investigate the cost of workingmen's houses; and to undertake such other investigations as the Government may desire to commit to its charge.

A circular requesting information concerning the principal subjects enumerated in the decree was addressed to the chief officials of the several provinces and departments comprising the Republic, and from returns received tables were prepared which show for those subdivisions the number of persons employed in industrial establishments, the average daily wages paid in various occupations and industries during the months of November and December, 1906, in

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some instances figures for 1903 being also given by way of comparison. From the information thus collected the total number of persons industrially employed is estimated at 43,044.

Copies of the blanks used in the collection of the data, together with the correspondence relating to that and other matters concerning the work of the bureau, are reproduced in the report.

The last chapter contains a discussion of the organization and functions of bureaus of labor statistics in other countries and a brief statement of the usefulness and importance of the Chilean bureau.

ITALY.

I Lavoratori delle Miniere. Ministero di Agricoltura, Industria e Commercio. Ufficio del Lavoro. Parte Prima, 287 pp. 1907.

This report presents the results of an investigation into the condition of the employees in the mines and quarries of Italy, undertaken in 1906, by the bureau of labor of the ministry of agriculture, industry, and commerce at the request of the Mine Labor Congress of 1904. The superior council of labor in the same year expressed its approval of such a study. The topics discussed are the age, conjugal condition, days lost on account of sickness, daily wages, and occupations of the workers.

According to data published in the annual mineral statistics for 1905, the total number of persons in the Kingdom in 1905 employed in mining was 63,996 and in quarrying 59,342.

The age grouping of employees in mines and quarries is shown in the following table:

PER CENT OF EMPLOYEES IN MINES AND IN QUARRIES IN EACH AGE GROUP, AT THE BEGINNING OF 1906.

Industry.	Number of employees.	Per cent of employees—						
		15 years of age or under.	16 to 21 years of age.	22 to 30 years of age.	31 to 40 years of age.	41 to 50 years of age.	51 to 60 years of age.	Over 60 years of age.
Mining	53,795	6.1	22.1	25.8	21.1	15.1	7.5	2.3
Quarrying	11,646	4.5	18.5	23.2	22.1	17.2	10.1	4.4

The largest percentage of workers in mining is shown to be between the ages of 22 and 30, with a rapid decrease in the number of workers in the higher ages. In quarrying the distribution among the groups is more uniform, but also shows the same general features.

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The following table shows the results of the investigation in regard to the conjugal condition of the workers in the two industries:

CONJUGAL CONDITION OF EMPLOYEES IN MINES AND IN QUARRIES, BY AGE GROUPS, AT THE BEGINNING OF 1906.

Age group.	Employees in mines.				Employees in quarries.			
	Number.	Per cent of—			Number.	Per cent of—		
		Single.	Married.	Widowed.		Single.	Married.	Widowed.
15 years or under	3,161	100.0	.....	.....	572	100.0	.....	.....
16 to 21 years	11,116	96.6	3.4	.....	2,144	95.2	4.7	0.1
22 to 30 years	12,582	60.6	39.1	0.3	2,705	47.6	51.6	.8
31 to 40 years	10,375	19.3	79.4	1.3	2,579	11.8	86.6	1.6
41 to 50 years	7,514	10.0	87.1	2.9	2,008	8.1	88.8	3.0
51 to 60 years	3,765	7.4	87.2	5.4	1,184	6.5	86.9	6.6
Over 60 years	1,182	5.8	83.5	10.7	515	5.8	81.9	12.2
Total	49,695	49.5	49.0	1.5	11,707	38.1	59.5	2.3

The table indicates that there is an apparent tendency for marriage to occur earlier in life among the quarry workers than among the mine workers.

The number of working days lost on account of sickness during the year 1905 by the mine and quarry workers is as follows:

AVERAGE NUMBER OF EMPLOYEES IN MINES AND IN QUARRIES AND AVERAGE NUMBER OF WORKING DAYS LOST PER EMPLOYEE ON ACCOUNT OF SICKNESS, BY AGE GROUPS, 1905.

Age group.	Employees in mines.		Employees in quarries.	
	Number.	Average days lost.	Number.	Average days lost.
15 years or under	1,984	3.7	185	7.9
16 to 21 years	7,581	4.6	705	7.9
22 to 30 years	9,114	6.0	906	7.8
31 to 40 years	7,479	6.7	890	8.6
41 to 50 years	5,363	6.9	765	9.0
51 to 60 years	2,577	9.5	437	13.6
Over 60 years	800	9.3	206	10.2
Total	34,898	6.2	4,094	9.0

While the total number of quarry workers investigated is much smaller than the number of mine workers, the data may, however, be regarded as representative. According to the preceding table, the rate of sickness is uniformly higher for quarry workers for each of the age groups. For both the mine and the quarry workers there is a general tendency to a higher sickness rate with increasing age. Both classes of workers show a lower rate for the ages over 60, but this is probably due to special influences.

The two following tables show by age groups the per cent of workers in mines and in quarries receiving each classified daily rate

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of wages at the beginning of the year 1906. The tables are based on data for 53,795 employees in mines and 11,646 employees in quarries.

PER CENT OF MINE EMPLOYEES RECEIVING EACH CLASSIFIED DAILY RATE OF WAGES AT BEGINNING OF 1906, BY AGE GROUPS.

Daily wage rate.	Per cent of employees in each wage class—							
	15 years of age or under.	16 to 21 years of age.	22 to 30 years of age.	31 to 40 years of age.	41 to 50 years of age.	51 to 60 years of age.	Over 60 years of age.	All ages.
0.50 lira ($0.097) or under	0.8	0.1	0.1	.....	.....	.....	0.2	0.1
0.51 lira ($0.098) to 0.75 lira ($0.145)	8.4	2.2	.3	0.1	0.1	0.1	.2	1.1
0.76 lira ($0.147) to 1.00 lira ($0.193)	28.1	7.3	1.0	.8	.9	1.2	2.7	4.1
1.01 lire ($0.195) to 1.25 lire ($0.241)	27.1	13.0	1.9	1.0	.9	1.5	2.3	5.6
1.26 lire ($0.243) to 1.50 lire ($0.290)	27.2	28.3	6.2	3.7	3.5	3.6	5.0	11.2
1.51 lire ($0.291) to 1.75 lire ($0.338)	4.2	16.1	11.8	7.2	6.8	7.4	9.3	10.1
1.76 lire ($0.340) to 2.00 lire ($0.386)	2.4	13.5	19.1	15.9	15.7	17.1	17.8	15.4
2.01 lire ($0.388) to 2.25 lire ($0.434)	.6	5.7	13.7	12.6	10.6	10.7	9.0	10.1
2.26 lire ($0.436) to 2.50 lire ($0.483)	.4	6.1	17.1	19.9	18.7	19.1	15.8	14.6
2.51 lire ($0.484) to 3.00 lire ($0.579)	.5	5.1	17.0	21.1	22.3	20.9	21.4	15.4
3.01 lire ($0.581) to 4.00 lire ($0.772)	.3	1.7	7.6	11.8	13.0	11.2	10.7	7.9
4.01 lire ($0.774) to 5.50 lire ($1.062)	.....	.6	2.9	4.1	5.4	5.7	4.2	3.1
5.51 lire ($1.063) to 7.00 lire ($1.351)	.....	.2	.8	1.1	1.3	1.1	.9	.8
7.01 lire ($1.353) or over	.....	.1	.5	.7	.8	.4	.5	.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

PER CENT OF EMPLOYEES IN QUARRIES RECEIVING EACH CLASSIFIED DAILY RATE OF WAGES AT BEGINNING OF 1906, BY AGE GROUPS.

Daily wage rate.	Per cent of employees in each wage class—							
	15 years of age or under.	16 to 21 years of age.	22 to 30 years of age.	31 to 40 years of age.	41 to 50 years of age.	51 to 60 years of age.	Over 60 years of age.	All ages.
0.50 lira ($0.097) or under	11.3	0.6	0.1	.....	.....	0.1	0.2	0.7
0.51 lira ($0.098) to 0.75 lira ($0.145)	12.5	2.6	.3	0.2	.....	.3	.8	1.2
0.76 lira ($0.147) to 1.00 lira ($0.193)	31.7	7.1	2.6	1.9	2.0	2.3	5.4	4.6
1.01 lire ($0.195) to 1.25 lire ($0.241)	13.0	5.8	1.3	.9	1.2	1.0	3.7	2.6
1.26 lire ($0.243) to 1.50 lire ($0.290)	12.9	11.5	3.4	3.1	3.2	3.9	7.5	5.5
1.51 lire ($0.291) to 1.75 lire ($0.338)	5.9	6.9	4.0	2.4	4.4	5.7	4.2	4.5
1.76 lire ($0.340) to 2.00 lire ($0.386)	4.6	16.2	7.0	7.3	7.1	7.8	12.4	9.0
2.01 lire ($0.388) to 2.25 lire ($0.434)	1.5	8.1	5.8	6.1	5.4	7.5	8.3	6.3
2.26 lire ($0.436) to 2.50 lire ($0.483)	2.5	13.3	12.5	12.1	12.0	12.8	14.5	12.2
2.51 lire ($0.484) to 3.00 lire ($0.579)	2.7	15.7	25.9	21.4	22.0	23.9	21.9	20.9
3.01 lire ($0.581) to 4.00 lire ($0.772)	.8	11.6	32.6	35.1	32.3	27.6	18.2	26.6
4.01 lire ($0.774) to 5.50 lire ($1.062)	.6	.4	3.5	7.2	8.8	5.8	2.5	4.7
5.51 lire ($1.063) to 7.00 lire ($1.351)	.....	.1	.7	1.8	1.1	1.0	.4	.9
7.01 lire ($1.353) or over	.....	.1	.3	.5	.5	.3	.....	.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The table for mine workers shows that the most frequent rates for persons 15 years of age or under are from 0.76 to 1.50 lire (14.7 to 29.0 cents) per day; for persons 16 to 21 years of age the most frequent rates are from 1.01 to 2.00 lire (19.5 to 38.6 cents) per day; for persons 22 to 30 years of age the most frequent rates are from 1.51 to 3.00 lire (29.1 to 57.9 cents) per day; for persons 31 to 40 years of age the most frequent rates are from 1.76 to 4.00 lire (34.0 to 77.2 cents) per day, and the same rates occur most frequently for persons over 40 years of age, though there is a tendency to a decrease in the

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ages over 60. For all mine workers the most frequent rates are from 1.26 to 3.00 lire (24.3 to 57.9 cents) per day.

The table for quarry workers shows that the higher wage rates occur more frequently than in the case of the mine workers. For persons 15 years of age or under the rates from 0.50 lira (9.7 cents) or under to 1.50 lire (29.0 cents) occur for over 80 per cent of the workers; for persons 16 years to 21 years of age the most frequent rates are from 1.26 to 4.00 lire (24.3 to 77.2 cents) per day; for persons 22 years to 60 years or over there is a tendency for uniformity in rates, 2.26 to 4.00 lire (43.6 to 77.2 cents) per day being the predominating rates. The same rates also predominate for all the quarry workers.

The following table shows the distribution of the mine workers among the various occupations, as well as the number of days worked and the average wages.

NUMBER OF PERSONS EMPLOYED IN MINING IN EACH OCCUPATION, AVERAGE DAYS WORKED, AND AVERAGE DAILY WAGES RECEIVED IN EACH OCCUPATION, 1905.

Occupation.	Average number of persons employed.					Average number of days worked.	Average daily wages.
	Males.		Females.		Total.		
	Under 15 years of age.	15 years of age or over.	Under 15 years of age.	15 years of age or over.			
Workers below ground:							
Overseers, foremen, etc	.....	862	.....	.....	862	313	$0.66
Pump men	.....	492	.....	.....	492	306	.33
Engineers, firemen, etc	.....	95	.....	.....	95	323	.55
Timbermen, etc	.....	628	.....	.....	628	297	.52
Masons and helpers	37	1,527	.....	.....	1,564	314	.37
Miners, maintenance men, etc	.....	1,410	.....	.....	1,410	229	.43
Miners, pick men, drill men	.....	15,885	.....	.....	15,885	266	.52
Laborers, carrying boys, trammers	2,776	10,607	.....	8	13,391	253	.32
Engine tenders, brakemen, etc	.....	1,494	.....	.....	1,494	268	.43
Sifters	.....	25	.....	.....	25	250	.37
Miscellaneous	43	684	.....	.....	727	281	.42
Total	2,856	33,709	.....	8	36,573	265	.44
Workers above ground:							
Overseers, foremen, watchmen, etc	2	671	.....	9	682	342	.54
Engineers, firemen, pump men	8	652	.....	.....	660	296	.52
Machinists, lathe men, etc	.....	94	.....	.....	94	283	.69
Blacksmiths, fitters, apprentices	56	651	.....	.....	707	285	.49
Masons and helpers	28	381	.....	.....	409	277	.48
Carpenters and apprentices	3	289	.....	.....	292	284	.55
Road men, etc	.....	26	.....	.....	26	287	.39
Pick men, drill men	19	1,710	.....	.....	1,729[a]	302	.71
Laborers, carrier boys, trammers, furnace men	740	5,473	13	133	6,359	261	.36
Engine tenders, brakemen, etc	.....	888	.....	.....	888	269	.43
Sifters	267	843	146	890	2,146	280	.24
Screeners	6	102	.....	39	147	304	.33
Washery workers	3	202	1	89	295	278	.34
Kiln men, etc	1	1,075	.....	.....	1,076	278	.43
Weigh men	.....	31	.....	.....	31	327	.52
Miscellaneous	104	1,769	.....	48	1,921	283	.43
Total	1,237	14,857	160	1,208	17,462	277	.43
Workers below ground and workers above ground	4,093	48,566	160	1,216	54,035	269	.43

The largest number of workers was employed as miners, pick men, etc., and as laborers. The average number of days worked by both

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below ground and above ground workers was 269, with a slightly higher number for the above ground workers.

The same data are given in the following table for the quarry workers:

NUMBER OF PERSONS EMPLOYED IN QUARRIES IN EACH OCCUPATION, AVERAGE DAYS WORKED, AND AVERAGE DAILY WAGES RECEIVED IN EACH OCCUPATION, 1905.

Occupation.	Average number of persons employed.					Average number of days worked.	Average daily wages.
	Males.		Females.		Total.		
	Under 15 years of age.	15 years of age or over.	Under 15 years of age.	15 years of age or over.			
Superintendents, contractors	.....	659	.....	.....	659	249	$0.81
Foremen, bosses, etc	.....	37	.....	.....	37	266	.58
Carpenters	.....	21	.....	.....	21	275	.56
Masons	.....	28	.....	.....	28	244	.52
Machinists	.....	64	.....	.....	64	253	.62
Blacksmiths, etc	7	117	.....	.....	124	246	.58
Firemen	.....	33	.....	.....	33	263	.44
Miners	.....	1,341	.....	.....	1,341	243	.55
Quarrymen	26	4,169	.....	.....	4,195	233	.56
Laborers	99	2,483	4	11	2,597	242	.44
Apprentices	208	287	.....	.....	495	243	.25
Clearers, diggers, etc	.....	58	.....	.....	58	266	.47
Chiselers, squarers	23	1,878	.....	.....	1,901	239	.61
Carters, loaders, etc	6	466	.....	15	487	243	.49
Stone breakers, etc	4	58	.....	.....	62	240	.53
Kiln men	.....	40	.....	.....	40	245	.36
Miscellaneous	71	650	16	26	763	209	.49
Total	444	12,389	20	52	12,905	238	.53

The occupations in which the largest number of workers was engaged were miners, quarrymen, laborers and chiselers, etc. The average number of days worked was 238.

Salari ed Orari nei Lavori Edilizi, Stradali, Idraulici e di Bonifica, 1906. Ufficio del Lavoro, Ministero di Agricoltura, Industria e Commercio. 1907. 111 pp.

Since October, 1905, the bureau of labor of the Italian department of agriculture, industry, and commerce has conducted monthly inquiries into the amount, character, and conditions of labor performed upon the various kinds of construction and repair work carried on by or on behalf of the State. This information is collected through the offices of the government engineers charged with the direction of the work.

The present report shows the wages and hours of labor of the different classes of employees for the year 1906. The volume comprises three chapters of descriptive matter, followed by a detailed tabular presentation of the data gathered, the latter being arranged by occupations and localities. The first chapter contains a general account of the plan and scope of the inquiry and of the method employed in the collection of the information. The second chapter relates to wages and hours of labor in general and contains a table

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showing, by months and by localities, the usual length of the workday in a number of specified occupations. The third chapter is devoted to a consideration of the wages paid and working time most generally observed upon public works in each of the 16 principal subdivisions of the Kingdom.

An appendix shows, for the same territorial groups, the aggregate days of work during each month of the year 1906, classified by character of the enterprise and occupation of the persons employed.

RUSSIA.

Chislennost i Sostav rabochikh v Rossii na osnovanii dannykh pervoi vseobshchei perepisi naselenia Rossiiskoi Imperii 1897 goda (*Number and distribution of wage-workers in Russia, based upon the data of the first general census of population of the Russian Empire in 1897*). Prepared according to the requests of the Ministries of Finance and of Commerce and Industry, and published by the Ministry of Interior. 2 vols., xx, 300; 600 pp. St. Petersburg, 1906.

This report includes a detailed analysis of the data relating to wage-workers employed in Russian industry and commerce, according to the first Russian census of 1897, and in less detail to the wage-workers employed in agriculture and other branches of rural industry, in personal and domestic service, and to unskilled (common) laborers. It represents the results of an effort to study the wage-earning class as distinguished from salaried employees in Russia, and is of the utmost importance in any study of labor conditions in that country.

The reports of the first Russian census of 1897, published in 1905, contain tables showing the distribution of the population by occupation and also analyzing these data by nationality, religion, age, educational standard, etc. In addition the original schedule also contained the question as to the economic status of the individual, i. e., whether the person was an independent producer, employer, salaried employee, or wage-worker. It may be added that in view of the low level of wages the distinction between a salaried employee and a wage-worker is much more definite in Russia than it is in the United States. The elaboration of the data showing the distribution of the population according to economic status was not undertaken, however, because of the expense. After the publication of the general census reports, the ministry of finance, in view of the growing importance of the labor problem, suggested the desirability of a report on the wage-earners in manufacturing, mining, transportation, construction, and commerce. The report was prepared through the cooperation of the ministry of interior, of which the central statistical commission (intrusted with the entire work of the first

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census) is a part, the ministry of finance, and the ministry of commerce and industry, the latter having been organized in 1905. To this very exhaustive statistical report briefer data were added concerning the agricultural wage-workers, common laborers, and employees in domestic service, thus furnishing material for the study of the entire wage-earning class.

This report consists mainly of three general tables relating to the wage-workers of the first group (manufactures, mining, transportation, commerce, etc.). Table I shows the total number of wage-workers and of children under 15 years, by sex, for each industry and by the larger geographical divisions and separate provinces (93 pages). Table II shows the distribution of the wage-workers, by sex, conjugal condition, and size of family for each of 28 industrial groups and each geographical division and province (144 pages), Table III is the most elaborate, occupying 50 pages in the first volume and the entire 600 pages of the second volume. It shows the wage-workers by sex and age groups, and under age and sex groups, the number of literates for each industry (classified by 28 principal industries and by 149 branches of those industries) and for each province. The data for the other wage-earning groups are stated briefly in 12 pages, giving total number and distribution by age, sex, and large geographical division, and using a very simple classification of 10 groups.

The following table shows the number of wage-earners in Russia by sex, main industry groups, and geographical divisions:

NUMBER OF WAGE-EARNERS BY SEX, MAIN INDUSTRY GROUPS, AND GEOGRAPHICAL DIVISIONS, 1897.

Industry and sex.	Wage-earners in each group in—					Total wage-earners.
	European Russia.	Poland.	Caucasus.	Siberia.	Middle Asia.	
Mining, manufacturing, transportation, and commerce:						
Male	2,254,099	259,871	118,390	106,659	37,484	2,776,503
Female	384,079	51,179	4,540	4,328	936	445,062
Total	2,638,178	311,050	122,930	110,987	38,420	3,221,565
Agricultural pursuits:						
Male	1,281,626	297,711	159,020	124,134	106,362	1,969,453
Female	554,376	142,890	21,413	29,911	4,580	753,170
Total	1,836,002	440,601	181,033	154,045	110,942	2,722,623
Common laborers:						
Male	479,307	103,415	90,491	55,442	80,771	809,426
Female	206,558	50,477	12,253	12,415	3,719	285,422
Total	685,865	153,892	102,744	67,857	84,490	1,094,848
Servants:						
Male	593,434	95,553	45,631	25,419	16,564	776,601
Female	1,054,304	177,931	45,549	44,611	13,639	1,336,034
Total	1,647 738	273,484	91,180	70,030	30,203	2,112,635
All occupations:						
Male	4,608,466	756,550	414,132	311,654	241,181	6,331,983
Female	2,199,317	422,477	83,755	91,265	22,874	2,819,688
Total	6,807,783	1,179,027	497,887	402,919	264,055	9,151,671

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The total number of wage-earners, as determined by this investigation, was 9,151,671, of whom 69.2 per cent were male and 30.8 per cent female. In the table is shown the distribution of these wage-earners by sex, main industry groups, and geographical divisions. The wage-earners engaged in mining, manufacture, transportation, and commerce constituted 35.2 per cent, the agricultural laborers 29.7 per cent, the common or unskilled laborers 12.0 per cent, and the servants 23.1 per cent. The greatest proportion of wage-earners were in European Russia, with 74.4 per cent, and Poland, with 12.9 per cent, leaving only 12.7 per cent for the entire expanse of Asiatic Russia and the Caucasus. If the industrial wage-earners alone (those employed in mining, manufacturing, transportation, and commerce) are taken into consideration, a still smaller portion was found in Asiatic Russia and Caucasus, as European Russia had 81.9 per cent, Poland 9.7 per cent, Caucasus 3.8 per cent, Siberia 3.4 per cent, and Middle Asia 1.2 per cent.

Women constituted a very important element in the wage-earning population of Russia, namely, over 30 per cent. Naturally the greatest number of women wage-earners belonged to the servant group, of which they constituted 63.3 per cent, while of the agricultural laborers 27.7 per cent were women, of the unskilled laborers 26.1 per cent, and in industrial pursuits 15.8 per cent.

The degree of participation of women in separate industries is shown in greater detail in the following table, from which the nature of the wage-work of women can be better studied:

NUMBER AND PER CENT OF WAGE-EARNERS OF EACH SEX, BY INDUSTRIES, 1897.

Industry.	Total wage-earners.	Males.		Females.	
		Number.	Per cent.	Number.	Per cent.
Mining:					
Miners	163,738	155,020	94.7	8,718	5.3
Smelters	42,638	40,940	96.0	1,698	4.0
Total	206,376	195,960	95.0	10,416	5.0
Manufacturing:					
Textiles	530,138	310,436	58.6	219,699	41.4
Animal products	74,270	71,246	95.9	3,024	4.1
Wood working	173,043	166,295	96.1	6,748	3.9
Metal working	370,933	364,720	98.3	6,213	1.7
Minerals	83,138	74,469	89.6	8,669	10.4
Chemical products	61,094	45,247	74.1	15,847	25.9
Beverages—					
Alcoholic liquors	38,723	36,918	95.3	1,805	4.7
Other	4,220	4,035	95.6	185	4.4
Food products	194,703	183,941	94.5	10,762	5.5
Tobacco	27,994	10,620	37.9	17,374	62.1
Paper and printing	52,175	46,550	89.2	5,625	10.8
Instruments	8,030	7,722	96.2	308	3.8
Jewelry, etc	25,767	25,213	97.8	554	2.2
Clothing	326,470	256,889	78.7	69,581	21.3
Building	345,724	345,724	100.0	.....	.....
Carriages and wooden boats	8,793	8,768	99.7	25	.3
Other	65,357	54,029	82.7	11,328	17.3
Total	2,390,572	2,012,825	84.2	377,747	15.8

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NUMBER AND PER CENT OF WAGE-EARNERS OF EACH SEX, BY INDUSTRIES, 1897—Concluded.

Industry.	Total wage-earners.	Males.		Females.	
		Number.	Per cent.	Number.	Per cent.
Transportation:					
Post, telegraph, and telephone	5,463	5,439	99.6	24	.4
Water transportation	44,141	43,885	99.4	256	.6
Railroads	175,246	162,784	92.9	12,462	7.1
Carting	118,423	117,761	99.4	662	.6
Other	25,756	25,391	98.6	365	1.4
Total	369,029	355,260	96.3	13,769	3.7
Commercial pursuits:					
Commerce	118,787	113,171	95.3	5,616	4.7
Hotels, restaurants, etc	76,970	72,266	93.9	4,704	6.1
Liquor trade	17,336	15,270	88.1	2,066	11.9
Cleaning, laundry work, etc	42,495	11,751	27.7	30,744	72.3
Total	255,588	212,458	83.1	43,130	16.9
Agricultural pursuits, etc.:					
Agriculture	2,132,899	1,467,302	68.8	665,597	31.2
Cattle raising	411,817	341,596	82.9	70,221	17.1
Forestry	84,714	83,404	98.5	1,310	1.5
Other rural industries	57,990	44,820	77.3	13,170	22.7
Fishing and hunting	35,203	32,331	91.8	2,872	8.2
Total	2,722,623	1,969,453	72.3	753,170	27.7
Common (unskilled) laborers	1,094,848	809,426	73.9	285,422	26.1
Servants:					
In institutions	167,240	142,706	85.3	24,534	14.7
In factories, etc	226,743	205,720	90.7	21,023	9.3
House servants (janitors, etc.)	162,053	160,089	98.8	1,964	1.2
Domestic servants	1,556,599	268,086	17.2	1,288,513	82.8
Total	2,112,635	776,601	36.7	1,336,034	63.3
Grand total	9,151,671	6,330,983	69.2	2,819,688	30.8

Of all the wage-earning women, domestic servants constituted 45.7 per cent, agricultural laborers 23.6 per cent, common laborers 10.1 per cent, textile workers 7.8 per cent, those employed in cattle raising 2.5 per cent, in manufacture of clothing 2.5 per cent, and in all other industries 7.8 per cent, so that in 6 industries were over 90 per cent of the female wage-earners. Looking at the same facts from the point of view of the proportion between male and female workers, women were found to predominate in domestic service, comprising 82.8 per cent of all persons employed in this occupation, while other classes of servants showed a very small proportion of women. In cleaning, laundry work, etc., the proportion of women, 72.3 per cent, was almost as great; but somewhat surprising was the very high per cent of women, 62.1 per cent, in the tobacco industry and 41.4 per cent in the textile industry, while in agricultural and other unskilled labor the proportions were lower, being 31.2 per cent and 26.1 per cent, respectively. Female labor was also important in the manufacture of chemical products (soap, candles, matches) and in the clothing industry. It was very limited in mining, in transportation, and in commerce.

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The number of children employed under 15 years of age of each sex, and the proportion to the total number of persons employed, are given in the next table:

NUMBER OF WAGE-EARNERS UNDER 15 YEARS OF AGE AND PER CENT OF TOTAL WAGE-EARNERS, BY SEX AND INDUSTRIES, 1897.

Industry.	Total wage-earners.	Children under 15 years of age.			
		Males.	Females.	Total.	Per cent of total wage-earners.
Mining:					
Miners	163,738	1,522	238	1,760	1.1
Smelters	42,638	521	46	567	1.3
Total	206,376	2,043	284	2,327	1.1
Manufacturing:					
Textiles	530,138	9,152	7,835	16,987	3.2
Animal products	74,270	3,444	236	3,680	4.1
Wood working	173,043	9,758	501	10,259	5.9
Metal working	370,933	14,475	327	14,802	4.0
Minerals	83,138	3,435	792	4,227	5.0
Chemical products	61,094	920	658	1,578	2.6
Beverages—					
Alcoholic liquors	38,723	268	41	309	.8
Other	4,220	80	4	84	2.0
Food products	194,703	6,453	520	6,973	3.6
Tobacco	27,994	625	1,170	1,795	6.4
Paper and printing	52,175	4,650	880	5,530	10.6
Instruments	8,030	1,125	31	1,156	14.4
Jewelry, etc	25,767	3,977	74	4,051	15.7
Clothing	326,470	40,535	17,606	58,141	17.8
Building	345,724	5,197	.....	5,197	1.5
Carriages and wooden boats	8,793	592	1	593	6.7
Other	65,357	684	309	993	1.5
Total	2,390,572	105,370	30,985	136,355	5.7
Transportation:					
Post, telegraph, and telephone	5,463	42	.....	42	.7
Water transportation	44,141	160	3	163	.3
Railroads	175,246	273	55	328	.2
Carting	118,423	858	15	873	.7
Other	25,756	70	2	72	.3
Total	369,029	1,403	75	1,478	.4
Commercial pursuits:					
Commerce	118,787	18,176	520	18,696	15.7
Hotels, restaurants, etc	76,970	5,362	107	5,469	7.1
Liquor trade	17,336	1,533	77	1,610	9.3
Cleaning, laundry work, etc	42,495	1,062	620	1,682	4.0
Total	255,588	26,133	1,324	27,457	10.7
Agricultural pursuits, etc.:					
Agriculture	2,132,899	71,218	36,705	107,923	5.1
Cattle raising	411,817	92,515	30,756	123,271	29.9
Forestry	84,714	907	44	951	1.1
Other rural industries	57,990	1,203	1,225	2,428	4.2
Fishing and hunting	25,203	612	96	708	2.8
Total	2,712,623	166,455	68,826	235,281	8.7
Common (unskilled) laborers	1,094,848	15,661	8,011	23,672	2.2
Servants:					
In institutions	167,240	1,111	178	1,289	.8
In factories, etc	226,743	2,363	916	3,279	1.4
House servants (janitors, etc.)	162,053	1,287	98	1,385	.9
Domestic servants	1,556,599	14,182	154,615	168,797	10.8
Total	2,112,635	18,943	155,807	174,750	8.3
Grand total	9,151,671	336,008	265,312	601,320	6.6

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The total number of wage-earning children under 15 years of age was 601,320, or 6.6 per cent of the total wage-earners. Of this number 336,008, or 56 per cent, were boys. The classes of domestic service, agricultural labor, and cattle raising numbered 399,991, or 66.5 per cent of all the children. Domestic service was the main occupation of the girls, employing 58.3 per cent, and agriculture and cattle raising the main occupation of the boys, employing 48.7 per cent. In manufactures children constituted 5.7 per cent of the total number of wage-earners. The principal manufacturing industries employing child labor were clothing, textiles, metal working, wood working, food products, and paper and printing, named in the order of their importance as to the numbers employed.

The age distribution of the industrial workers is shown by sex, conjugal condition, and the educational standard in the following table:

NUMBER OF MALE AND FEMALE WAGE-EARNERS AND PER CENT MARRIED AND LITERATE, BY INDUSTRY AND AGE GROUPS, 1897.

Industry and age.	Males.			Females.		
	Total.	Per cent married.	Per cent literate.	Total.	Per cent married.	Per cent literate.
Mining, manufacturing, transportation, and commerce:						
12 years or under	33,240	.....	54.5	9,917	.....	40.6
13 to 14 years	101,709	.....	69.5	22,761	.....	56.2
15 to 16 years	195,077	0.1	69.6	47,335	0.9	47.5
17 to 19 years	361,747	4.5	65.6	81,369	8.7	39.8
20 to 39 years	1,519,096	63.6	55.4	215,685	54.0	25.4
40 to 59 years	494,506	83.2	42.1	59,584	45.8	13.3
60 years or over	69,733	68.7	33.7	8,226	17.4	15.3
Age unknown	1,395	41.4	37.9	185	41.6	23.8
Total	2,776,503	51.9	55.4	445,062	34.3	30.5
Agricultural pursuits:						
12 years or under	77,400	.....	21.3	31,875	.....	22.7
13 to 14 years	89,055	.....	28.4	36,951	.....	28.1
15 to 16 years	141,509	.2	28.6	67,394	.5	27.8
17 to 19 years	257,862	2.8	31.5	124,887	5.3	31.7
20 to 39 years	897,103	54.1	25.9	309,084	40.6	33.2
40 to 59 years	389,495	77.1	24.5	145,306	38.0	24.1
60 years or over	115,316	65.6	22.5	37,184	19.6	23.6
Age unknown	1,713	30.9	18.1	489	19.0	17.4
Total	1,969,453	44.1	26.3	753,170	25.9	29.5
Common laborers:						
12 years or under	6,077	.....	13.0	2,976	.....	9.6
13 to 14 years	9,584	.....	26.1	5,035	.....	15.1
15 to 16 years	24,523	.5	29.5	13,344	1.0	16.4
17 to 19 years	59,611	3.8	34.8	26,346	7.7	17.5
20 to 39 years	412,992	59.8	30.8	113,155	43.6	15.9
40 to 59 years	227,185	77.6	24.4	96,184	29.2	11.2
60 years or over	68,344	69.6	17.9	28,150	13.5	10.3
Age unknown	1,110	18.6	12.9	232	22.0	12.9
Total	809,426	58.5	27.9	285,422	29.3	13.9
Servants:						
12 years or under	7,606	.....	27.5	68,840	.....	13.8
13 to 14 years	11,337	.....	47.4	86,967	.....	21.4
15 to 16 years	22,500	.6	49.6	131,950	.3	24.1
17 to 19 years	55,692	4.8	50.0	213,943	3.5	27.7
20 to 39 years	384,763	64.9	51.0	540,111	30.3	27.8
40 to 59 years	206,452	82.5	40.9	218,643	25.9	15.4
60 years or over	87,289	66.1	29.7	74,096	10.4	11.9
Age unknown	962	46.6	40.2	1,484	16.6	17.7
Total	776,601	61.9	45.5	1,336,034	17.7	23.3

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There is a considerable difference in the age distribution of the two sexes for employees engaged in industrial pursuits (mining, manufacturing, transportation, and commerce). Of the male employees of known ages 24.9 per cent were under 20 years of age, and of the females 36.3 per cent; 54.8 per cent of the males, and 48.5 per cent of the females were from 20 to 39 years old; 20.3 per cent of the males, and 15.2 per cent of the females were 40 years old or over. Hired labor of aged women is not therefore an unusual occurrence. A comparison of the number of married of each sex shows a large proportion of married women as wage-workers; of all female employees 34.3 per cent were married, and of those 15 years of age or over, 37.0 per cent. Of the female employees 20 to 39 years old, 54.0 per cent were married. This is partly explained by the frequency of husband and wife being employed in the same factories, which furnish lodgings to their married employees.

The male employees have a higher educational standard than the female employees, as 55.4 per cent of all male employees and only 30.5 per cent of the female employees could read and write. The younger employees show a much higher percentage of literacy than the older generation, which indicates a marked improvement of educational facilities.

Among the male employees of known ages in agriculture and rural industries 28.8 per cent were under 20 years of age, as against 24.9 per cent in industrial pursuits; the unskilled labor group had 12.3 per cent under 20 years of age; among the male servants the proportion was 12.5 per cent. It is characteristic that the highest percentage of literacy is not shown by the youngest age groups, but by the group 17 to 19 years; many of the agricultural or unskilled laborers evidently acquired the ability to read and write at a more advanced age than the industrial workers who live in the cities.

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The following table shows the household relations for the four large groups of wage-earners:

NUMBER AND PER CENT OF WAGE-EARNERS LIVING ALONE, AS MEMBERS OF FAMILIES, AND AS HEADS OF FAMILIES, BY SEX, 1897.

Industry and relation to household.	Males.		Females.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Mining, manufacturing, transportation, and commerce:						
Living alone	1,622,448	58.4	217,488	48.9	1,839,936	57.1
Living as members of a family	461,005	16.6	197,837	44.4	658,842	20.5
Head of family	693,050	25.0	29,737	6.7	722,787	22.4
Total	2,776,503	100.0	445,062	100.0	3,221,565	100.0
Agricultural pursuits:						
Living alone	1,175,899	59.7	419,483	55.7	1,595,382	58.6
Living as members of a family	275,944	14.0	255,893	34.0	531,837	19.5
Head of family	517,610	26.3	77,794	10.3	595,404	21.9
Total	1,969,453	100.0	753,170	100.0	2,722,623	100.0
Common laborers:						
Living alone	325,622	40.2	113,518	39.8	439,140	40.1
Living as members of a family	143,734	17.8	105,310	36.9	249,044	22.8
Head of family	340,070	42.0	66,594	23.3	406,664	37.1
Total	809,426	100.0	285,422	100.0	1,094,848	100.0
Servants:						
Living alone	483,106	62.2	1,247,357	93.4	1,730,463	81.9
Living as members of a family	35,139	4.5	72,846	5.4	107,985	5.1
Head of family	258,356	33.3	15,831	1.2	274,187	13.0
Total	776,601	100.0	1,336,034	100.0	2,112,635	100.0
All classes:						
Living alone	3,607,075	57.0	1,997,846	70.9	5,604,921	61.3
Living as members of a family	915,822	14.4	631,886	22.4	1,547,708	16.9
Head of family	1,809,086	28.6	189,956	6.7	1,999,042	21.8
Total	6,331,983	100.0	2,819,688	100.0	9,151,671	100.0

The interesting fact brought out by this table is the very large proportion of wage-earners living alone, namely, 57 per cent of the male workers, and 70.9 per cent of the female workers (the latter figure including all the female servants living in the home of the employer); 14.4 per cent of the male wage-earners and 22.4 per cent of the female wage-earners lived at home as members of the family, the latter figure including the working women living with their husbands. The remaining 28.6 per cent of men and 6.7 per cent of women were living in their own households as heads of families. Thus the number of males living as heads of families, 1,809,086, was much smaller than the number of married men, 3,264,930, indicating a very large number of married men living apart from their families. This condition is partly explained by the fact that many workingmen's wives remain in the agricultural villages while their husbands are employed elsewhere; in many such cases the workingmen have not altogether severed their connection with their families. An examination of similar data for each large group of wage-earners shows this condition to be particularly common among the industrial workers.

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OPINIONS OF THE ATTORNEY-GENERAL ON QUESTIONS AFFECTING LABOR.

[It is one of the duties of the Attorney-General of the United States to furnish opinions advising the President and the heads of the executive departments in relation to their official duties when such advice is requested. Opinions on questions affecting labor will be noted from time to time under the above head.]

EIGHT-HOUR LAW—APPLICATION TO LOCK TENDERS, ETC.—*Advance sheets, 26 Op., page 605.*—The Secretary of War addressed an inquiry to the Attorney-General "as to whether certain classes of employees, variously designated as lock masters, lock keepers, lock helpers, lockmen, watchmen, firemen, enginemen, stokers, teamsters, etc.," are mechanics or laborers within the meaning of the eight-hour law of August 1, 1892. The reply is reproduced practically in full:

It seems from the inclosed memorandum that, at certain locks and dams, persons are employed whose duties are performed at irregular hours and do not require their attention for eight hours in the calendar day. These employees are liable to be called upon at any hour in the day for a service lasting but a few minutes; but, as a fact, the whole sum of the time in which they are engaged is but a fraction of eight hours. The rest of the day is entirely their own. The question is whether the service and employment of such persons, under such circumstances, is legal and proper within the limit and restriction of the statute.

As to laborers employed in a similar manner, I refer you to what was said by my predecessor, Attorney-General Moody (26 Op., 67):

"But I think that the eight-hour day means eight hours of effective labor, and therefore so far as your questions present the case of laborers and mechanics who, from the exigencies of the situation, must wait until after the completion of the regular day to finish their work, I am of the opinion that the blasting, cleaning of trucks, repair of machinery, and all other similar work essential to prompt and continuous service in the regular day may be legally done before and after the regular hours. To be more specific, laborers and mechanics who are called upon to do two hours' work, for example, before or after the regular day begins or ends have no just cause for complaint that the law is violated if they are only called upon to work six more hours during the regular hours. The law gives no countenance to the conception that the interval between the beginning and end of the regular day is a controlling convention which excludes labor at any other time and entitles workmen to stand around idle if their services can not be fully availed of during that interval. The law limits the working day to eight hours, but it does not prescribe in what hours of the day the work shall be done. Practically, no doubt, there should be a real necessity, as is obviously the case here,

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for work during other hours than the regular day; and there should be scrutiny and care lest abuses arise which, however, the right of contract, subject to the law, between laborer and employer ought to prevent."

The cases mentioned in the memorandum of the Judge-Advocate-General come fully within these principles. Under the Cincinnati office are included locks on the Muskingum, Kentucky, and Big Sandy rivers. The employees live at the locks, in Government houses, and none is required to work an aggregate time in excess of eight hours though they are subject to call.

At Milwaukee are included 21 locks at canals of Fox River; the number of lockages averaging less than 2 per day and rarely exceeding 8 for the twenty-four hours.

Other localities at which similar conditions prevail were mentioned, and the opinion continues:

In these cases to require that a sufficient number of men should be employed to prevent any of them from being liable to duty except within a determined and arbitrary period of eight continuous hours would be to put an unreasonable construction upon the statute. It would recognize a favored condition of employment not intended by the law.

A familiar rule is, that where a particular construction of a statute will occasion great inconvenience or produce inequality and injustice, that view is to be avoided, if another and more reasonable interpretation is present in the statute.

Other instances mentioned in the memorandum are upon different footing. At places under the control of the Pittsburg office men are sometimes required to work more than eight hours "when dam is being raised or lowered;" and the service is one "requiring skill and training and could not safely be entrusted to inexperienced men." This does not make a case of extraordinary emergency. The act includes skilled as well as unskilled workmen. The need is for more men; not for the employment during more hours.

At other places, employees are classed as watchmen, dam tenders, custodians, etc. With respect to the legal status of such employees under the eight-hour law, it is impossible to speak with certainty without very full information as to the nature of their employment.

EIGHT-HOUR LAW—APPLICATION TO WATCHMEN, MESSENGERS, ETC.—*Advance sheets, 26 Op., page 623.*—The Secretary of War submitted an inquiry as to the application of the eight-hour law to employees stationed at Washington, D. C., and engaged in certain described duties, to which inquiry the Attorney-General replied as follows:

1. I am of opinion that "a watchman, whose duty is to watch the entrance of one of the public buildings occupied by the War Department, executing instructions with regard to admitting persons into the building and permitting public property to be taken out of the building, reporting to his chief any violation of law, disturbance of the peace, etc., that may be brought to his attention, to guard the

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building and property therein during the night," is not either a laborer or mechanic within the meaning of the eight-hour law.

2. I am of opinion that "a laborer, whose duty is to perform manual labor in the removal of furniture and office fixtures, cutting grass, washing floors and windows, and general office cleaning," is not a laborer within the meaning of the eight-hour law. The services required seem to be more those of a domestic servant than those of a laborer in the usual meaning of the term.

3. I am of opinion that a hostler, "whose duty is to feed, drive, and care for horses, and to clean carriages, harness, and stables," is rather a domestic servant than a laborer within the meaning of the eight-hour law, and therefore not subject to the provisions of that law.

4. I am of opinion that a "messenger, whose duty is to sweep floors and do general office cleaning, attend to fires, and carry messages," is not a laborer or mechanic within the meaning of the eight-hour law.

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DECISIONS OF COURTS AFFECTING LABOR.

[Except in cases of special interest, the decisions here presented are restricted to those rendered by the Federal courts and the higher courts of the States and Territories. Only material portions of such decisions are reproduced, introductory and explanatory matter being given in the words of the editor. Decisions under statute law are indexed under the proper headings in the cumulative index, page 1005 et seq.]

DECISIONS UNDER STATUTE LAW.

EMPLOYERS' LIABILITY—EMPLOYMENT OF CHILDREN—VIOLATION OF STATUTE—DEFENSES—DISCOVERING AGE—*Syneszewski v. Schmidt et al., Supreme Court of Michigan, 116 Northwestern Reporter, page 1107.*—Czeslau Syneszewski, a minor, sued by his next friend to recover damages for injuries received while employed in a tannery in violation of the child labor law of the State. Judgment was in his favor in the circuit court of Wayne County, whereupon the defendants appealed, the appeal resulting in an affirmation of the decision of the court below.

The law in question prohibits the employment of children under 14 years of age in manufacturing establishments, or under 16 years of age in dangerous employments. It also requires an age certificate to be procured for children under 16 years of age. Syneszewski was less than 14 years of age at the time of his injury. He was helping his boss clean a machine, when the latter unexpectedly started it and caught the plaintiff's fingers in some cogs, causing the injury complained of. The contentions on which the appeal was based were that the employers were not liable, the injury having been caused by the act of a fellow-servant of the plaintiff; that the court below had erred in refusing to instruct the jury that if the plaintiff had represented himself, at the time he was hired, as being above 16 years of age, and his employers in good faith believed him to be so, they were not liable; and that in any case, it was not their violation of the statute, but the act of the boss that was the immediate cause of the injury. None of these grounds was allowed by the supreme court,

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as appears from the following extracts from its opinion, which was delivered by Judge Ostrander:

It is not open to question (Sipes *v.* Michigan Starch Co., 137 Mich. 258, 100 N. W. 447; Sterling *v.* Union Carbide Co., 142 Mich. 284, 105 N. W. 755; Beghold *v.* Auto Body Co., 149 Mich. 14, 112 N. W. 691) that this statute raises a duty to and for the benefit of persons of the classes liable to be injured by its violation. It is the general rule that a civil action is maintainable where the person complaining is of a class entitled to take advantage of the law, is a sufferer from the disobedience, is not himself a partaker in the wrong of which he complains, or is not otherwise precluded, by the principles of the common law, from his proper standing in court. In giving effect to a portion of the statute we are now considering, this court held that the plaintiff did not assume the risk of violation of the statute duty. (Sipes *v.* Michigan Starch Co., supra.) In Sterling *v.* Union Carbide Co. the plaintiff was injured by machinery while doing the work he was employed to do. It was held that "disregard of the inhibition of this statute, by placing the plaintiff at work at an employment where his life or limb was endangered, constituted the negligence or wrong of which plaintiff has the right to complain, and that the causal connection between that wrong and the injury to plaintiff is clear."

It was said, further, that the question of assumption of risk was settled by the case of Sipes *v.* Michigan Starch Co. Upon this point I am not able to distinguish the case at bar and the Sterling case. A distinction sought to be made by counsel rests upon the fact, in the case at bar, that plaintiff was injured by the negligent act of a fellow-servant, that the work he was doing was not in itself dangerous, and that injury would not have resulted but for such negligent act. In the argument counsel fail to give effect to two important facts. In the first place, it was not lawful for defendants to employ plaintiff in their establishment at any work. It is true the trial court did not instruct, and the jury did not proceed, upon this particular inhibition. But the fact is not disputed, and when the law forbids that one shall be employed as a servant, it seems illogical to say that he may be a fellow-servant, or that the employer can be permitted to say that one who, under the terms of positive law, may not be his servant is fellow-servant of his servants. It is only by becoming a servant that the risks of employment, including those arising out of the negligence of fellow-servants, are assumed. In the second place, there was, in this case, what may be termed a "double violation" of the statute. Plaintiff was injured, as was the plaintiff in the Sterling case, while engaged in the work he was set to do. It was dangerous work if his "boss," without warning, set the machine in motion. He did set it in motion, and injury resulted. The negligence of the "boss," who was undoubtedly a servant of the employer, was a hazard of the employment which, if assumed by plaintiff, effectually destroys his right to the enforcement of the statute duty. It was not different, so far as assuming risk is concerned, from the hazard arising from unguarded machinery. And any argument based upon the idea that the injury was caused by a fellow-servant implies that the

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rule obtaining in cases where injury is caused by an intervening, independent, responsible, human agency has no application. Appellants' first and last contentions are therefore overruled.

Judge Ostrander then reviewed the testimony as to the representations of the age of the boy, and cited the provision of the law which requires a sworn statement of the age, etc., of children under 16 years of age to be secured as a condition to employment, after which he said:

Some effect must be given to this provision. It is unnecessary to determine whether it is mandatory, or whether a false statement made by a parent would prevent a recovery by a child unlawfully employed. It is a precaution which, in furtherance of the legislative purpose, the employer is, in terms, required to observe. It can not be said that its observance would not tend to prevent unlawful employment of children, and therefore prevent violations of the law. It is calculated, not alone to discover the exact age of children under 16, but, also, whether they are over or under that age. Defendants did not observe it. They say it is not required, if the child is more than 16 years old. But plaintiff was not 16 years of age, and was employed by them, in violation of the statute, without any precaution, except to inquire his age and to judge, from his appearance, that he was telling the truth. His age was in question. They regarded the fact as of importance, and they determined, upon the evidence presented, whether his employment would be lawful or unlawful. It has been suggested that the statute should be construed as providing, in effect, for a certificate and permit from the parents or guardians of children—a construction which is aided by the words employed in the 1905 form of the statute—in the absence of which, so far as the age of the child is concerned, employers hire children at their peril. Whatever force there may be to this suggestion, it is sufficient, for the purposes of this case, to say that all that defendants did they would be, in good faith, required to do in any case. But the statute does not accept the mere statement of a child as to his age, and the court can not aid one who did accept it.

EMPLOYERS' LIABILITY—RAILROADS—BRIDGES OVER TRACKS—DANGER SIGNALS—*Chesapeake and Ohio Railway Company v. Rowsey's Administrator, Supreme Court of Appeals of Virginia, 62 Southeastern Reporter, page 363.*—The plaintiff had secured judgment against the company named for the death of G. W. Rowsey, a brakeman in its employ, in the circuit court of Albemarle County, from which judgment the company appealed. Rowsey's death was caused by his striking his head against a low bridge over the tracks of the railroad, and the suit involved the construction of section 1294–d, clause 36, of the Code of 1904. This section requires danger signals to be erected near low bridges, etc., over the tracks and declares that failure to comply with this law shall make the company liable for

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injuries resulting from the insufficient height of the bridge. The danger signals were in place in the present case, but the judgment of the court below was affirmed. As to the construction of the section mentioned, the court said:

The section mentioned was not intended to diminish the liability of railroads, but to increase it. If the railroad whose tracks pass under any bridge, tunnel, or structure not sufficiently high to admit of the safe passage of cars upon the tracks with the servants and employees at their posts of duty on said cars fails to maintain at proper distances on each side of said tunnel or structure warning signals of approved design and in general use, those operating such railroads are made liable in damages for the death or injury of any employee or servant resulting from the insufficient height of such bridge, and no contract, expressed or implied, and no plea of, or defense based upon, the contributory negligence of such servant, shall relieve such railroad from liability. Railroads having the structures denounced by this statute who do not erect the danger signals for which it provides are deprived of all defense, and made liable for whatever injury may have resulted from their conduct. But, where the warning signals are placed, we do not understand that the railroad company is thereby made immune from damages resulting from its negligent act in having a bridge or other structure not sufficiently high to admit of the safe passage of its cars with its servants and employees standing at their posts of duty on said cars.

PUBLIC WORK—PROTECTION OF LABORERS AND MATERIAL MEN—CONTRACTORS' BONDS—ASSIGNMENTS OF CLAIMS—*Title Guaranty & Trust Company v. Puget Sound Engine Works et al., United States Circuit Court of Appeals, Ninth Circuit, 163 Federal Reporter, page 168.*—The trust company named was adjudged liable on a bond to secure the payment of claims for labor and material furnished for the prosecution of public work, in accordance with the act of Congress of August 13, 1894, amended February 24, 1905, 33 Stat. 811. (See Bulletin No. 60, pp. 717, 718.) The work in question was the construction of a steam vessel for the United States. From the judgment of the circuit court the company appealed, raising a number of points, on each of which it was overruled. Only those portions of the opinion which are of interest to labor are reproduced.

Judge Hunt, speaking for the court, said:

The rulings of the court below were, in effect, that, under the terms of the contract entered into, the vessel was a "public work" within the provisions of the statute.

Appellant's counsel earnestly contend that the view of the lower court is erroneous, and argue that the contract of the Puget Sound Engine Works was not for the prosecution or completion of any public work, that title to the vessel did not pass to the government

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until completion, delivery, and acceptance, and that the laborers and material men were amply protected by the lien laws of the State of Washington.

The purpose of the original act of 1894 is not altered by the amendment of 1905; nor does the amended act restrict the classes of persons who are entitled to the benefits of the bonds required. As the Supreme Court has said, in comparing the two statutes, the amendment "shows the consistent purpose of Congress to protect those who furnish labor or material in the prosecution of public work." (Hill *v.* American Surety Co., 200 U. S. 197, 26 Sup. Ct. 168.) Undoubtedly, Congress meant to substitute the obligation of the bond required for such a security as can in most cases be obtained by attaching a lien to the property of an individual. By keeping in mind that the intent of the statute is that material and labor actually contributed to the construction of the work shall be paid for, and thus that the material man and the laborer shall be protected, construction of the statute and bond is quite simple.

The statute extends to construction not only of any public building, but to the prosecution and completion of "any public work," and even goes farther by including "repairs upon any public building or public work." There is no limitation that it shall only apply to public works attached to the soil, and where it is agreed that, as fast as any part of the thing upon which the work is being done is completed and paid for under a percentage plan, such completed part becomes the property of the United States, no lien under a State statute could be enforced, and therefore there is no reason for excluding the construction of a vessel from within the definition of a public work.

It is contended that the United States ought to have been made a party to this suit; but the United States failed to institute any suit and failed to assert any rights by intervention. It does not appear to have had any interest in this action. Under the amended act, the United States has a priority under certain conditions: It may protect such prior right by bringing suit on the bond within six months after the completion and final settlement under the contract; but, if no such suit is brought, then a creditor can sue, and all creditors have a right to intervene within a year. It would seem that the United States, having failed to sue, or to intervene in a suit brought, can not claim against the surety by reason of the execution of the bond.

Objection is made to the claims of the Eyres Transfer Company, Chesley Towboat Company, Allmond Company, and Puget Sound Pattern Works, upon the ground that bills for the labor and materials furnished by these several parties are not within the purview of the bond. The Eyres Transfer Company claimed cartage and freight money paid out. It was not a common carrier, protected by its lien on freight carried, but was a local transfer company engaged in the business of cartage and delivering. We can not approve, though, of the claim of the Eyres Company for freight money advanced to the carriers and added to the cartage bill.

The claim of the Chesley Towboat Company was for wharfage. Such a claim seems to be within the reasonable purview of the statute. (United States *v.* Morgan (C. C.) 111 Fed. 474.)

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The claims of the Allmond Company and the Puget Sound Pattern Works were for patterns furnished to the molding department of the Puget Sound Engine Works. The patterns were used for the castings which went into the vessel. Why should not those who furnished the patterns be protected as are those who erect the scaffolding upon which carpenters stand, in doing their work upon the actual construction of a ship? We believe they should be.

The point is made that the claims of laborers and material men are not assignable under the act; but in United States, to the Use of Fidelity National Bank of Spokane, *v.* Rundle et al., 100 Fed. 400, 40 C. C. A. 450, the right of laborers and material men to enforce the obligation of the sureties on the bond of a contractor for government work, as required by 28 Stat. 278, was held to be assignable.

Error is assigned upon the action of the court in allowing each of the interveners a statutory fee of $10, taxed as costs. The decision in the case of The Oregon, 133 Fed. 609, 68 C. C. A. 603, sustains the action of the lower court.

It is unnecessary to discuss the other points raised by appellant. We have examined them all and find no reason to reverse the decision.

The judgment will be modified by reducing the amount awarded to the Eyres Company by deducting $55.32, amount of freight money paid. As so modified, the judgment in favor of that particular claimant will be affirmed, and the judgments in favor of all other claimants will be affirmed.

RAILROADS—CONSTRUCTION OF SHELTERS OVER REPAIR TRACKS—CONSTITUTIONALITY AND CONSTRUCTION OF STATUTE—*St. Louis, Iron Mountain and Southern Railway Company v. State, Supreme Court of Arkansas, 112 Southwestern Reporter, page 150.*—The railroad company named was convicted of violating the law, Act No. 233, Acts of 1905, which makes it "unlawful for any railroad company or corporation, or other persons who own, control or operate any lines of railroad in the State of Arkansas, to build, construct or repair railroad equipment, without first erecting and maintaining at every division point a building or shed over the repair tracks, same to be provided with a floor where such construction or repair [work] is permanently done, so as to provide that all men permanently employed in the construction and repair [of] cars, trucks and other railroad equipment, shall be under shelter during snows, sleet, rain and other inclement weather." An appeal was taken, raising questions as to both the constitutionality and the application of the law. Following is a summary of the evidence as set forth by Judge Hill, who announced the opinion of the supreme court:

Van Buren is a division point on the line of the appellant railroad, and it maintained repair tracks there which were built in 1903. The number of men employed in repair work varied, but a force was regularly employed, and was about 15 or 20 at the time the company was charged with the violation of the act, and usually averaged about that many. There was no building or shed over the repair tracks, nor

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a floor where the construction or repair work was done. There was no protection from the weather for employees engaged in this repair work. The repairs usually done were substituting new for broken knuckles, putting in draft timbers, bolsters, end sills, and putting roofs on cars and supplying new trucks and wheels for defective or broken ones. Generally speaking, the work done on these repair tracks was that of putting in missing or defective or broken parts on cars which were necessary to enable the car to keep in transit and component parts of the cars were kept in stock for this purpose, and other light repairs that are necessary to conform to the M. C. B. rules and regulations covering interchange of cars. The repairs done at this point were "running repairs." The shops at Baring Cross, near Little Rock, is where the general and permanent repair and construction work of the company is done for the territory in which Van Buren is situated.

The act was upheld, and the judgment of the lower court affirmed, as appears from the quotations from the opinion given herewith:

Two questions are presented on appeal: Does the act apply to the conditions shown to exist at Van Buren? Does the act violate the Constitution of the United States or the constitution of Arkansas?

1. The jury found, and correctly, under the facts, that the work done at Van Buren on the repair tracks was such as was contemplated by the act. The use of the word "permanent" in the act is inapt. The first use of it, "where such work is permanently done," means "constantly"; and "constant" is one of its synonyms. The second use of it, "all men permanently employed" in the repair of cars, is equivalent to "all men regularly employed." Taking the act as a whole, and reading it in connection with its title and the evident purpose thereof, its meaning is reasonably clear. It is the duty of the court to disregard inapt words used, and to enforce it according to its intent gathered from the whole act, and not from any particular word or words therein. Even if the literal use of the word "permanent" is accepted, the work done at Van Buren is within it, for repairs which were made there were usually as permanent as those made elsewhere. For instance, as one of the witnesses illustrated, if a sill was put in, it was as permanent as if done at Baring Cross. But this literal interpretation was not intended by the legislature.

2. Was the act constitutional? The contention of counsel is thus stated: "A brief analysis of the act discloses its fatally arbitrary classification. It applies only to any railroad company or corporation or other persons who own, control, or operate any lines of railroad in the State of Arkansas engaged in the building, construction, or repair of the railroad equipment at every division point. Any other corporation or other person engaged in the building, construction, or repair of railroad equipment within this State may avoid the burden imposed by this act and engage in the building, construction, or repair of railroad equipment without limit and compel those engaged in this work to pursue their labor without shelter during snow, sleet, rain, and other inclement weather." It is not shown here, as it was in Cotting *v.* Kansas City Stockyards Co., 183 U. S. 79, 22 Sup. Ct. 30, 46 L. Ed. 92, that as a matter of fact the law operated only upon one corporation, although others in like and similar conditions were

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not affected by it, owing to a classification based entirely upon volume of business. Nor was shown here, as in Yick Wo *v.* Hopkins, 118 U. S. 356, 6 Sup. Ct. 1064, 30 L. Ed. 220, that, although fair on its face, yet the practical operation of the law made it fall unequally upon persons similarly situated. The contention here is that the act shows upon its face an arbitrary selection of railroad corporations who own, control, and operate lines of railroad in the State engaged in the building, construction, or repair of railroad equipment at division points to bear the burden imposed, and excludes by this selection any other persons or corporations who may be engaged in the construction, building, or repairing of railroad equipment. It is stated at the bar that there are no such corporations or persons engaged in such business in this State, and, so far as the court knows from such sources as it is proper for it to take information, this statement is true.

It is asserted, and probably the court could take cognizance of it as a matter of common knowledge, that there are persons and corporations in other States engaged in the building, construction, and repair of railroad equipment who do not own or operate any lines of railroad. The argument is that under this act it is possible for a commercial corporation or private individual to engage in this business in Arkansas, and, when that happens, which may occur at any time, then the act will fall unequally upon persons similarly situated and engaged in like occupations, and thereby be offensive to the equal protection of the law provision. The court in Williams *v.* State, 108 S. W. 838, said: "The legislature in framing this statute met a condition which existed, and not an imaginary or improbable one." While it is not improbable that some commercial corporation may engage in this business in this State, yet that is an imaginary objection to the operation of the act, and it was "a condition, not a theory," which called forth this legislation. The court is unable to find the classification here made offensive to the equality clause of the Constitution as construed by the Supreme Court of the United States, whose decisions are binding on this subject.

SUITS FOR WAGES—ATTORNEYS' FEES—CONSTITUTIONALITY OF STATUTE—*Chicago, Rock Island and Pacific Railway Company v. Mashore, Supreme Court of Oklahoma, 96 Pacific Reporter, page 630.*—This was an action by W. F. Mashore to recover a sum of money due for labor, and also, under paragraph 6915, Wilson's Revised and Annotated Statutes, to recover an attorney's fee, which that statute allows where there is a successful suit for wages. The case itself is not of interest here, but the provision as to the attorney's fee was called in question and was declared unconstitutional, as appears from the following opinion of the court, which was delivered by Judge Dunn:

The statute providing the assessment of attorney's fees in cases of this character is violative of the fourteenth amendment of the Constitution of the United States, in that it does not give to all parties the same, equal protection of the law. The defendant, being sued for

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wages under this statute, is not on an equal footing with the plaintiff. If he makes an unsuccessful defense, he is mulcted in an attorney's fee, to be paid to the plaintiff, while if he is successful, the plaintiff is not required to pay any attorney's fee to him. In other words, justice is not dispensed, with an impartial and equal hand, to these litigants. A court is always loath to hold a statute, the solemn act of the legislature, unconstitutional and void, and never does so, except where its provisions make this duty a plain and imperative one. In the present case we have examined a large number of authorities wherein the constitutionality of such statutes has been raised, and in every one of them the court of last resort has held it unconstitutional.

A number of cases were then cited, after which the court concluded:

From the foregoing authorities it will be seen that our statute providing for recovery, in suits for personal services rendered by a laborer, clerk, servant, nurse, or other person, an attorney's fee not to exceed $15, to be fixed by the court, is in conflict with the fourteenth amendment to the Constitution of the United States, in that it denies to the defendant the equal protection of the law.

DECISIONS UNDER COMMON LAW.

INJUNCTION—VIOLATION—CONTEMPT—PERSONS NOT PARTIES TO ORIGINAL BILL—NOTICE—NATURE OF PROCEEDINGS—*Garrigan v. United States, United States Circuit Court of Appeals, Seventh Circuit, 163 Federal Reporter, page 16.*—Daniel Garrigan was adjudged guilty of contempt in the United States circuit court for an alleged violation of an injunction issued during the teamsters' strike in Chicago in 1905, and was sentenced to a term of imprisonment. From this judgment Garrigan appealed, and secured a reversal of the judgment of the lower court. The injunction in question had been secured by the Employers' Teaming Company, and was directed against certain organizations and individuals named, and the proceedings in the court below were at the instance of this company.

The evidence on which conviction was obtained, and the principles of law involved showing the grounds of reversal, are set forth in the opinion of the court, which was delivered by Judge Seaman, and which for the most part is reproduced herewith:

The plaintiff in error was not a party to the bill filed by the Employers' Teaming Company for injunctional relief, nor a member of either of the associations named as defendants therein, nor named in the restraining order whereof violation is averred in these contempt proceedings, and neither averment nor proof appears of his relation to or privity with either of the parties enjoined, prior to or apart from the alleged acts in violation and contempt of such order. Thus the proceedings and conviction which are brought for review under this writ of error are distinctly criminal in their nature, and reviewable in conformity with the established doctrine of such procedure. (Besette *v.* W. B. Conkey Co., 194 U. S. 324, 326, 24 Sup. Ct. 665; Matter of Christensen Engineering Co., 194 U. S. 458, 459,

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24 Sup. Ct. 729.) Whatever of confusion appeared in the authorities, prior to the decisions above cited, as to the distinction in contempt proceedings between those of civil and criminal nature—the one remedial for the benefit and enforcement of the rights of parties to a suit, and the other to punish for acts in contempt of the power and dignity of the court—that classification has become the settled rule for testing the nature of the proceeding and reviewable questions.

The proceedings against the plaintiff in error were instituted by a petition filed by the Employers' Teaming Company, as complainant in the above-mentioned bill, averring, in substance, the issuance of the injunctional order referred to, its wide publication in newspapers in Chicago, and posting conspicuously on all the wagons of complainant which were engaged in the operation described, and stating "upon information and belief that each of the persons hereinafter named as respondents to this, its said petition, did at the time of the commission of the acts hereinafter complained of have full knowledge and notice of the issuance of said temporary stay or injunctional order, and knew, or by the exercise of ordinary intelligence might have known, of the issuance of said injunctional order." An answer was filed by the plaintiff in error, under a rule entered and served to show cause why he should not be adjudged guilty of contempt and after raising various objections to the petition and proceeding, which denies under oath commission of the several acts and offenses charged in the petition and affidavits, and denies knowledge or notice of the injunction, or violation thereof "intentionally or otherwise."

The evidence upon which the conviction rests appears in a bill of exceptions, and consists mainly of ex parte affidavits, purporting to be made by witnesses of the occurrences in controversy—with a single witness, one Dimick, produced and testifying in open court—which affidavits were submitted on behalf of the parties respectively. In the opinion filed by the trial court it is aptly remarked that the opposing affidavits, "as is usual in such controversies, were directly contradictory of each other;" and that, in "such irreconcilable conflict of testimony, it is often impossible to get a clue to the truth." While these affidavits concur in proving a case of mob violence during the attempted movement of complainant's teams and wagons through the streets of Chicago, and riotous interference with the persons guarding them, those introduced for the prosecution and defense are "directly contradictory" in all the facts bearing upon the issues involved, both in respect of the conduct of the parties, collectively and individually, engaged in the riot, and of the part and conduct of the plaintiff in error therein. Assuming, without deciding, that it was within the discretion of the trial court to hear the case upon such affidavits, instead of ascertaining the facts from testimony taken in open court, as was the course adopted in the Savin Case, 131 U. S. 267, 268, 9 Sup. Ct. 699, and mentioned as of course in United States *v.* Shipp, 203 U. S. 563, 575, 27 Sup. Ct. 165, the facts to authorize conviction must nevertheless be clearly established, and the affidavits introduced here exemplify the infirmity of such ex parte means for the "legal understanding" of facts in controversy intended by the rules of evidence.

In any view of the charges of contempt and evidence so received, it is unquestionable that the only issues of fact were: (a) Whether the accused had knowledge of the injunction; and if such knowledge

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appeared, whether he committed acts, either (b) in aid of its violation by the parties enjoined, or (c) in plain defiance of its terms—and thus in contempt of the authority and commands of the court. As it is neither charged nor proven that the plaintiff in error was one of the parties enjoined, he is not chargeable for breach or violation of the injunction, in the well-recognized sense of those terms applicable to parties. He was bound, alike with other members of the public, to observe its restrictions when known, to the extent that he must not aid or abet its violation by others, nor set the known command of the court at defiance, by interference with or obstruction of the administration of justice; and the power of the court to proceed against one so offending and punish for the contemptuous conduct is inherent and indisputable. (Seaward *v.* Paterson, 1 L. R. Ch. Div. (1897) 545, 554, 76 Law Times (N. S.) 215; In re Reese, 107 Fed. 942, 47 C. C. A. 87, 90.) We believe the above-mentioned distinction in contempt proceedings, between disobedience of the injunction by parties and privies and the conduct of others in contempt of the authority and commands of the court, to be elementary, and the sufficiency of the evidence in the case at bar to support conviction must be tested thereunder. The question discussed in the briefs, whether the general averment in the petition that the plaintiff in error "violated said injunctional order," authorized reception of this evidence to establish either class of contempt relied upon for conviction, is not involved in our view of the effect of the affidavits, incorporated in the petition, that they aver such facts and furnish notice for the introduction. The petition is plainly defective, however, in the averments to charge the plaintiff in error with knowledge of the injunction—stating alternatively that he "knew, or by the exercise of ordinary intelligence might have known, of the issuance"—but laying out of view for the present inquiry the objection raised thereupon, we proceed to consideration of the versions of fact on which the finding and conviction are predicated, to ascertain their bearing and sufficiency.

The present proceedings arose out of notorious conditions of mob violence which attended a strike in Chicago, known as the "teamsters' strike," in April and May, 1905. While the "contempt proceeding is sui generis," it is distinctly criminal in its nature (Bessette *v.* W. B. Conkey Co., supra), and the accused is clearly entitled to the benefits of the common-law presumption of innocence, with its strict requirement of proof for conviction, although the pleadings may not be subject to the technical rules of the criminal law.

Taking up the affidavits introduced in support of the charges of contempt, they plainly state a vicious attack upon two teams of the complainant and the persons attending as guards, by a mob and individuals named, for the manifest object of obstructing the teams and injuring the guards. They identify the plaintiff in error as one of the assailants, "in the uniform of a city fireman," and state: That he was following up the teams and guards, in their passage through the street; that he was observed "throwing stones at the colored men guarding the teams," was swearing at the guards, "calling vile names," and cried out to the crowd, to "hang the damned niggers;" and that he ultimately assaulted and struck one of the guards, after such guard was arrested by the city police force, was in their custody and either in a police wagon or "getting into it." The single witness,

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Dimick, called to testify upon the hearing, states only the last-mentioned assault upon the guard so arrested and in custody in the police wagon. These versions of fact, in substance—without a fact stated to connect the mob violence or individual attacks with parties named in the injunction, either as associations or individuals, or with express defiance of such injunction, and with no proof tending to show knowledge of the injunction or intent to defy its commands, aside from the alleged publications of the order in the public press and notices thereof borne upon the wagons thus interfered with—constitute the evidence upon which the plaintiff in error is adjudged guilty of contempt. On the part of the plaintiff in error, his presence when the conflict occurred is admitted, but his testimony is specific in denial of every act of violence or participation above mentioned, and he states, in substance, that his only part in the disturbance was to assist "the police to protect life and property," and that he did so assist in quelling the riot and arresting rioters, in conformity with his understanding of his duty, as one of the city firemen. This version is supported by several affidavits, by policemen and other witnesses, and subsequent proceedings in the criminal court were introduced by way of corroboration.

The findings by the court stated in the judgment are in general terms, in effect, that plaintiff in error, (a) with full knowledge of the injunction, (b) did willfully and in violation of its terms interfere with, "and aid and abet the defendants, or some of them, to said bill," in interfering with "the business of said the Employers' Teaming Company" and its employees and agents engaged therein, and (c) that he "has failed to show cause why he should not be attached and punished as for contempt."

We are of opinion that each of the findings is unsupported, in any admissible view of the facts so established. The finding that the plaintiff in error had "full knowledge of the injunction"—a fundamental requisite for either charge of contempt—rests alone on the alleged publicity of the issuance, through newspapers and notices thereof which were posted on the wagons intercepted by the mob. No testimony appears of word or action on the part of the plaintiff in error, or in his hearing, in reference to the injunction; nor that his attention was directed to the wagons, their contents, or any notices thereon. He is clearly entitled to the benefit of "the presumption of innocence, as evidence in favor of the accused, introduced by the law in his behalf" (Coffin *v.* United States, 156 U. S. 432, 458, 460, 15 Sup. Ct. 394, reaffirmed in the recent opinion of this court in Dalton *v.* United States, 154 Fed. 461, 83 C. C. A. 317), which arises alike in respect of notice and conduct, as "an instrument of proof created in his favor;" and the mere inference of "full knowledge," derived solely from the above-mentioned facts, is without force, as we believe, to overcome the express denial of knowledge on the part of the accused, fortified by the presumption thus defined. The finding of such knowledge therefore is unsupported by the needful proof to authorize conviction and can not be upheld under the foregoing view. So the question whether the insufficient averment thereof in the petition constitutes reviewable error does not require solution.

Upon these premises therefore, that knowledge of the injunction is unproven, and that no proof appears that the plaintiff in error was engaged by or with any person or association enjoined in its violation,

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we are of opinion that the evidence fails to establish cause for his conviction of contempt of court, within either of the classes found and adjudged against him. The misconduct stated by the witnesses for the prosecution—in assailing and abusing the guards, who were protecting the movement of the teams, and inciting the mob to like interference—however criminal in its nature and disturbing in purpose and effect, thus standing alone, does not constitute contempt within either definition of such offense. Willful defiance and contempt of the authority and order of the court can not be intended or committed without information that such authority has been exercised in the issuance of an injunction protecting the movement and services thus interfered with. Nor is the alleged misconduct brought within the finding of violation of the order, in aiding or abetting "the defendants, or some of them, to said bill of complaint, in committing the acts and grievances complained of," for the further reason that it does not appear in evidence that any such parties were engaged in the attack, directly or indirectly. In reference to the alleged subsequent assault upon one of the guards, when such guard was under arrest and in the custody of the police authorities, we deem it sufficient to remark that the guard was not then serving as escort, and any offense then committed was against the dignity of the State, and not that of the court issuing the injunction.

For want of evidence that the plaintiff in error was guilty of contempt of court in his alleged misconduct, the judgment of the circuit court is reversed, with direction to discharge the rule against the plaintiff in error.

STRIKES—INJUNCTION—PICKETING—INTERFERENCE WITH EMPLOYMENT—*Jones et al. v. E. Van Winkle Gin & Machine Works, Supreme Court of Georgia, 62 Southeastern Reporter, page 236.*—Certain employees of the company named became dissatisfied and left its employment, whereupon a demand was made by a local lodge of the International Association of Machinists for certain changes in the conduct of the company's business. This demand was not complied with, whereupon a strike was declared. Picketing and threats followed, and the company secured an injunction from the superior court of Fulton County, from which order an appeal was taken to the supreme court, which affirmed the order with some modifications.

The facts involved and the principles of law applied are set forth in the following extracts from the opinion of the court, which was delivered by Judge Evans:

After hearing evidence, the defendants were "enjoined from placing themselves, their agents or confederates, near the approaches to the petitioner's premises described in the petition and adjoining thereto to induce persons working for petitioner not to work for it, and persons seeking employment by petitioner not to enter petitioner's employment, by threats of violence, intimidation, or persuasion, until the further order of the court." Exception is taken to the judgment in its entirety, and specially to so much thereof as forbids the defendants from placing themselves in or near the premises of the

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plaintiff for the purpose of persuading persons not to enter the plaintiff's employment, or to quit the same, so long as the entrances to the plaintiff's premises were not obstructed, and so long as violence, force, and intimidation were not used. The points raised by the demurrer were not argued in the brief, but only the legality of the decree and the sufficiency of the evidence to support it.

The lawfulness or unlawfulness of "picketing" has been the subject-matter of discussion in a large number of cases in this country. In the absence of statutes, courts have drawn from the elemental principles of the common law certain standards by which this modern factor used by labor unions as a means of settling controversies between employer and employees must be regulated. When strikers patrol the streets and approaches of the premises where the strike is in progress, and their number is so great, or their conduct is such, as to intimidate and coerce the employees into quitting their employment, or others from seeking employment, they are guilty of unlawful acts, and will be enjoined from a continuance of them. Sometimes the number of strikers engaged on the patrol may be so great that those intended to be affected by the demonstration will be intimidated by the number of the strikers or their sympathizers without special overt acts. The courts have repeatedly held that the assembling of strikers around the establishment of the employer in such numbers as will serve as a menace to those employed, or the keeping of patrols in front of or about the premises of the employer, accompanied by violence or any manner of coercion to prevent others from entering into or remaining in his service, will be enjoined.

It is a penal offense in this State to attempt by threats, violence, intimidation, or other unlawful means to prevent any person from engaging in any lawful employment, or to hinder, by such means, any person from employing laborers. But a court of equity is not ousted from the exercise of its peculiar functions of preventing irreparable damage merely because, in exercising such functions, it may also prevent the commission of a crime. The court does not interfere to prevent the commission of crime, although that may incidentally result, but it exerts its force to prevent individual property from destruction, and ignores entirely the criminal feature of the act. And Mr. Pomeroy (6 Pom. Eq. Jur. 619) says that "it is everywhere the rule, following the general principle in equity, that where there is ground for equitable interference, as where an irreparable injury is threatened to property, the fact that the act is also a crime is not a reason for refusing an injunction." This principle was recognized and applied by this court in the case of an indictable nuisance. (Mayor of Columbus *v.* Jaques, 30 Ga. 506.) So it is no reply to the invocation of the equitable remedy to prevent irreparable injury to property that the acts which cause the damage may also be indictable.

As already said, members of a labor union, either individually or as an association, have no right by force, menace, or intimidation to prevent others from working upon such terms as they are willing to accept, or to hinder by such means any person from employing laborers. In many cases it may be difficult to draw the line of demarcation between intimidation and inoffensive persuasion. In a New York case (Rogers *v.* Evarts [Sup.] 17 N. Y. Supp. 264) it was

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said: "It may be impossible to lay down a general rule as to what surrounding circumstances will characterize persuasion and entreaty as intimidation. Each case must probably depend upon its own surroundings. But, where evidence presents such a case as to convince the court that the employees are being induced to leave the employer by operating upon their fears rather than upon their judgments or their sympathy, the court will be quick to lend its strong arm to his protection. Rights guaranteed by law will be enforced by the court, whether invoked by employer or employee." The very word "picket" is borrowed from the nomenclature of warfare, and is strongly suggestive of a hostile attitude towards the individual or corporation against whom the labor union has a grievance. But the law does not forbid employees who have quit their employer from using legitimate argument to induce others to refrain from taking their places. The current of authority is that a court of equity will not enjoin employees who have quit the service of their employer from attempting to persuade, by proper argument, others from taking their places, so long as they do not resort to intimidation or obstruct the public thoroughfares. [Cases cited.]

The court then reviewed some of the evidence, citing some of the remarks of the pickets, and said:

These and similar threats, and the constant surveillance of the plant by the pickets, caused other departments of the plaintiff's plant to shut down for lack of machinists. At this juncture of affairs the defendants were restrained by a temporary order from interference with the plaintiff's business; and after the grant of the restraining order, according to the testimony of the superintendent, "everything has assumed a different attitude, and a feeling of rest and confidence has taken place which did not exist while the premises were picketed." The quoted remarks of the strikers to the men who were seeking work were more than a peaceable and argumentative presentation of their grievance. The language implied a threat of harm, and the warning to stay out, if unheeded, might be attended with hurtful consequences. The language of these pickets was clearly intimidative, and tended to coerce compliance with their request not to work for the plaintiffs; and there was no error in enjoining such conduct. The form of the injunction is perhaps too broad, in that the strikers are enjoined from using all form of persuasion. As we have pointed out, it was not unlawful for the strikers to use legitimate argument and moral suasion in presenting their case to those who offered to take their places, so long as it is neither coercive and intimidating in character. In affirming the judgment, direction is given to so amend the decree as to make it accord with the opinion of the court in this particular.

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LAWS OF VARIOUS STATES RELATING TO LABOR ENACTED SINCE JANUARY 1, 1904.

[The Tenth Special Report of this bureau contains all laws of the various States and Territories and of the United States relating to labor in force January 1, 1904. Later enactments are reproduced in successive issues of the Bulletin, beginning with Bulletin No. 57, the issue of March, 1905. In the cumulative index, page 1005 et seq., are indexed all laws found in the Tenth Special Report, together with those enacted since January 1, 1904, and published in Bulletin Nos. 57 to 79, inclusive.]

TENNESSEE.

ACTS OF 1907.

CHAPTER 256.—*Hiring out children to support parents in idleness.*

[See Bulletin No. 73, p. 799.]

CHAPTER 308.—*Employment of women and children—Hours of labor.*

[See Bulletin No. 73, p. 799.]

CHAPTER 540.—*Mine regulations.*

SECTION 1. Section 1 of * * * [chapter 237, Acts of 1903] is hereby amended so as to add at the end of said section the following: "Immediately after the passage of this act there shall be appointed in the same manner as now provided for the appointment of the present district mine inspectors an additional district mine inspector, who shall hold his office for a period of two years from date of appointment, and thereafter until his successor is elected and qualified. Said additional district mine inspector must have a general knowledge of the conduct of the mining business, and shall, in addition to such qualifications, be thoroughly familiar with the work necessary in the compilation of mining statistics. He shall receive a salary of ($1,700) seventeen hundred dollars per annum and the same traveling expenses as that allowed other district mine inspectors under section 8 of said act, to be paid in the same manner, and he shall be subject to the same rules and regulations as now provided or may hereafter be provided for other district mine inspectors."

SEC. 2. Section 7 of said act [shall] be amended so as to add at the end of section 7 the following: "In order that such full and complete statistics as, in the opinion of the chief mine inspector, is essential for the promotion of the mineral industry of Tennessee, may be obtained and published in said annual report, each and every person, firm, company, or corporation engaged in the mining, quarrying, or production of coal, cobalt, copper, fluorspar, gold, iron, ores, lead, lime, manganese, mineral waters, natural gas, petroleum, phosphate rock, platinum, sand and gravel, sand, lime, brick, silver (mines report), stone, including limestone, sandstone, and marble, or other stone, zinc, gypsum, ocher, pyrites, salt-clay products, slate, or other minerals, or engaged in the manufacture of coke, brick, coal tar, lime, pig iron, ammonium sulphate, gas coke, Portland and natural cement, grindstone, metallic paint and mortar colors, flint, and all other by-products of any minerals produced in this State, shall, on or before January 15 of each year, make out and send to the chief mine inspector upon blanks, to be by him furnished and sent out for that purpose, detailed annual report, giving such statistics and information concerning the output of said mines or plant, the tonnage, number of employees, and the number of days worked. It is thereby declared a misdemeanor for any person, firm, company, or corporation to fail or refuse to furnish the chief mine inspector any and all information called for for said annual report, as above provided, on or before the fifteenth day of January of each year; and any all parties or agents so failing or refusing to furnish said reports within the time specified shall, upon conviction, be fined one hundred dollars for each day of delay, said fine to go

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to the State of Tennessee. And it is hereby made the duty of the chief mine inspector to report said failure to the district attorney-general of the district where the mine, quarry, or other works are situated; and in the event of the failure of any such parties to furnish such information, it shall be the duty of the chief mine inspector to call upon such party and inspect such books and records of said firm or corporation or company as will give him the information above provided for; and such person, firm, or corporation shall be required to permit examination of all necessary books or records as will enable the chief mine inspector to obtain the information above provided for, such inspection to be made at its chief office and at any reasonable time; and their failure to permit such inspection shall be a misdemeanor and finable as above provided."

SEC. 4. Section 14 of said act [shall] be amended so as to read as follows:

Sec. 14. For the purpose of the examination of applicants for certificates of qualification the chief mine inspector and district mine inspectors provided for in this act be, and are hereby, constituted a board of examiners, of which the chief mine inspector shall be the chairman. Said board may hold meetings at such times and places for the examinations of applicants for the position of mine foremen, gas bosses, etc., as in its judgment may be most convenient. Said board shall have power to make such rules and regulations for the conduct of said examinations as in its judgment may seem proper for ascertaining the qualification of the applicants, and shall conduct all examinations in the presence of the majority of its members. Said board shall report its action to the secretary of state, and majority of same shall certify to the qualification of each applicant who satisfactorily passed the examination, and shall serve without compensation. The chief mine inspector is hereby authorized and empowered to revoke and annul the certificate of any foreman or assistant mine foreman or gas boss or other foreman or bosses issued under this act upon satisfactory evidence appearing to him that the holder of said certificate is or has been guilty of negligence in the performance of his duties, immoral conduct, or his wanting in integrity, and upon the revocation of such certificate the chief mine inspector shall make a record of same in his office, and shall immediately certify the same to the secretary of the state, who shall record said revocation upon a book containing copy of certificate issued. The chief mine inspector shall notify the holder of such revoked certificate of said revocation, and the holder of said certificate shall immediately surrender the said revoked certificate to the chief mine inspector, to be by him turned over to the secretary of state for cancellation. Should the holder of said revoked certificate fail or refuse to surrender the same as herein provided, he shall be deemed guilty of a high misdemeanor, and, upon conviction, be fined not less than one hundred dollars ($100) and be imprisoned not less than three months nor more than eleven months in the county jail or workhouse: *Provided*, Any foreman, assistant mine foreman, gas boss, or other foreman or boss whose certificate has been revoked as herein provided may, within ten days after receipt of the notice of revocation herein provided for, notify the chief mine inspector of his desire to be reinstated and have said order of revocation annulled; and if at the time he shall execute bond, payable to the State of Tennessee, with good and sufficient security, conditioned to pay the costs incident to the proceeding, in the event he is unsuccessful in his efforts to be reinstated and set aside the order of revocation, it shall then be the duty of the chief mine inspector to fix a day, not later than ten days from such written demand, [and a place,] which place shall be within the civil district where the party whose license is revoked lived at the time of the revocation, and at said time and place the chief mine inspector shall appear and hear such legal evidence as may be offered by such aggrieved party, as well as such legal evidence as may be offered in favor of the order of the chief mine inspector revoking his license, which evidence shall be reduced to writing, and upon such evidence said chief mine inspector shall pass judgment, either affirming the order of revocation of the chief mine inspector or reversing the same; and in the event the order of the chief mine inspector is reversed, such party shall be reinstated. The written testimony taken in the case shall be preserved by the chief mine inspector as a part of the records of his office: *Provided*, That either party may take the case from the action of the mine inspector made on said written evidence before the judge of the circuit court of the county where said trial is had by writ of certiorari prosecuted within twenty days from the date of the judgment of said inspector; and in the event of such action, the chief mine inspector shall cause a certified copy of all the evidence, as well as the original order of revocation and his order

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thereon, made on said written evidence, certified by him as a true and correct copy of same, to be filed in the office of the clerk of the circuit court where the said petition for certiorari is filed, and the case shall thereupon stand for hearing before the judge of said circuit court upon such certified record at the next term of the court after the filing of same. The writ of the certiorari in such cases may be granted by any judge of the State on proper petition being presented to him therefor, and upon the execution of a bond for the costs of the petition in the event that the same is prosecuted by the party whose license is revoked, the circuit judge shall pronounce judgment on said certified copy, either affirming the action of the mine inspector or revoking and setting aside the same. In all trials of cases of this kind before the circuit court the mine inspector shall be represented by the district attorney-general, and the party whose certificate has been revoked shall be entitled to have counsel to represent him as in other matters of litigation. In the event the party seeking to be reinstated is unsuccessful in his contention, judgment shall be rendered by the chief mine inspector in the first instance against said party and the sureties on the bond filed for that purpose for all costs incident to the proceeding and by the circuit judge for all costs incident to the prosecution of the writ of certiorari. If the action of the chief mine inspector is annulled and set aside, either by the inspector or by the circuit judge, then the costs of the proceeding shall be certified by the clerk and the judge and the attorney-general to the comptroller of the State for payment out of the appropriation for the support of the mining department of the State.

SEC. 5. Section 15 of the said act [shall] be amended so as read as follows:

Sec. 15. Said certificate shall contain the full name, age, and place of birth of the applicant, also the length and nature of his previous experience in and about coal and other mines, and the secretary of state shall, without cost, keep a record in his department of all the certificates issued. Before the issuance of certificates to any applicant the applicant must give satisfactory evidence to the board of examiners of his good conduct, honesty, capability, and sobriety, and shall pay the said board of examiners for the use and benefit of the State the following fees: For conducting the examination (to be paid for when the examination is held), five dollars ($5); for the issuance and registration of the certificate, five dollars ($5), to be paid for when issued. All fees collected by virtue of provisions of this section shall be reported and paid into the state treasury at the end of the month during which said collections are made by the board of examiners, to be placed to the credit of the mining department.

SEC. 6. So far as section 35 of said act fixed fees for the inspection of mines it is hereby amended so as to provide for the following schedule of fees for the use of the State: Mines employing an average of 100 inside employees or over, $35; mines employing an average of 75 to 99 inside employees, $30; mines employing an average of 50 to 74 inside employees, $25; mines employing an average of 25 to 49 inside employees, $20; mines employing an average of 15 to 24 inside employees, $15; mines employing an average of 10 to 14 inside employees, $10; mines employing an average of less than 10 inside employees, $5.

SEC. 7. Section 20 of said act [shall] be amended so as to strike out after the word "expedient," in the latter part of same, the following words: "*Provided, further,* That said mine foreman shall not be subject to the control of the operator or owner in the discharge of the duties required of said mine foreman by this act," and said mine foreman is hereby expressly declared to be the agent or representative of the operator or owner of the mine in the discharge of the duties required of said mine foreman by this act.

SEC. 8. Section 21 of said act [shall] be amended by striking out the following words at the end of said section: "*Provided,* The said gas boss shall not be subject to the control of the owner or operator in the discharge of any of the duties required of said gas boss by this act," and said gas boss is hereby expressly declared to be the agent or representative of the operator or owner of the mine in the discharge of the duties required of said gas boss by this act.

Approved April 15, 1907.

CHAPTER 541.—*Intelligence offices.*

SECTION 4. Each vocation, occupation, and business hereinafter named in this section is hereby declared to be a privilege, and the rate of taxation on such privilege shall be as hereinafter fixed, which privilege tax shall be paid to the county court clerk as provided by law for the collection of revenue.

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INTELLIGENCE OFFICES AND EMPLOYMENT AGENCIES.

Each office, per annum..... $10.00

Approved April 15, 1907.

CHAPTER 593.—*Public printing to be done within the State.*

SECTION 1. Whatever printing is done by order of the legislature, or in pursuance of a law, for the State, is public printing, such as the printing of the journals and acts of the legislature, or whether it be in the shape of job work, [and] shall be done within the boundaries of the State: *Provided*, The printing can be contracted for and done in Tennessee as cheaply as elsewhere.

Approved April 15, 1907.

TEXAS.

ACTS OF 1907.

CHAPTER 32.—*Railroads—Headlights for locomotives.*

SECTION 1. It shall be the duty of every railroad corporation or receiver or lessee thereof, operating any line of railroad in this State, within six months after the passage of this act, or within such additional time as may be prescribed by order of the railroad commission of Texas, after a proper showing of their inability to comply by the railroad has been made, to equip all locomotive engines used in the transportation of trains over said railroad with electric headlights of not less than 1500 candlepower, measured without the aid of a reflector, or other headlights of not less than 1500 candlepower, measured without the aid of a reflector: *Provided*, That this act shall not apply to locomotive engines regularly used in the switching of cars or trains.

SEC. 2. Any railroad company or the receiver or lessee thereof, doing business in the State of Texas, which shall violate the provisions of this act, shall be liable to the State of Texas for a penalty of not less than one hundred dollars, nor more than one thousand dollars for each offense, * * * .

Approved March 20, 1907.

CHAPTER 41.—*Sufficient crew required for railroad trains.*

SECTION 1. It shall be unlawful for any railroad company doing business in the State of Texas to run over its road, or part of its road outside of the yard limits, any passenger train with less than a full passenger crew, consisting of four persons, one engineer, one fireman, one conductor and one brakeman.

SEC. 2. It shall be unlawful for any railroad company doing business in the State of Texas to run over its road, or part of its road, outside the yard limits, any freight train, gravel train or construction train with less than a full crew, consisting of five persons, one engineer, one fireman, one conductor and two brakemen.

SEC. 3. It shall be unlawful for any railroad company doing business in the State of Texas to run over its road, or part of its road, outside of the yard limits, any light engine without a full train crew, consisting of three persons, one engineer, one fireman and one conductor: *Provided*, That nothing in this act shall be construed as applying in the case of disability of one or more of any train crew while out on the road between division terminals, or to switching crews in charge of yard engines or which may be required to push trains out of yard limits.

SEC. 4. Any railroad company doing business in the State of Texas which shall violate any of the provisions of this act shall be liable to the State of Texas for a penalty of not less than one hundred dollars or more than one thousand dollars for each offense, * * * .

Approved March 25, 1907.

CHAPTER 51.—*Hours of labor of employees on railroads.*

SECTION 1. It shall hereafter be unlawful for any corporation or receiver operating any line of railroad in whole or in part in this State, or any officer, agent or representative of such corporation or receiver to require or knowingly

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permit any conductor, engineer, fireman, brakeman, train dispatcher or telegraph operator, who has been on duty for fourteen consecutive hours to perform any work until he has had at least eight hours off duty, except in cases where such fourteen hours expires while a train is between stations or at a station where there are no facilities for sidetracking such train, in either of which events the conductor, engineer, fireman, or brakeman, or all of them, may be permitted to proceed with such train to the first station where such facilities can be had, but no further: *Provided, however*, That in case said fourteen hours shall expire when a train is within twenty miles of a terminal toward which it is going, or within twenty miles of its destination, the aforementioned employees operating such train may be permitted to proceed to such terminal or destination, but in such case shall not be required to do any switching or other work which would in any manner retard them in speedily reaching such terminal or destination: *Provided further*, That this act shall not apply in case of casualty upon such railroad, directly affecting such employee, nor shall it apply to sleeping car companies.

SEC. 2. It shall hereafter be unlawful for any corporation or receiver operating any line of railroad in whole or in part in this State, or any officer, agent, or representative of such corporation or receiver to require or knowingly permit any conductor, engineer, fireman, brakeman, train dispatcher or telegraph operator, who has been on duty for fourteen consecutive hours and who has gone off duty, to again go on duty or perform any work for such corporation or receiver until he has had at least eight hours off duty.

SEC. 3. Any corporation or receiver operating a line of railroad in whole or in part within this State, who shall violate any of the provisions of this act shall be liable to the State of Texas in a penalty of not less than two hundred dollars nor more than one thousand dollars for each offense, and such penalties shall be recovered and suit therefor shall be brought in the name of the State of Texas in any court having jurisdiction of the amount in Travis County, Texas, or in any county into or through which said railroad may pass. Such suit or suits may be brought either by the attorney-general or under his direction or by the county attorney or district attorney of any county or judicial district into or through which said railroad may pass, and such attorney bringing any action under this act shall be entitled to a compensation of one-third of the total amount of penalties recovered.

SEC. 4. Any officer, agent or representative of any corporation or receiver operating any line of railroad in whole or in part within this State, who shall violate any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction therefor shall be punished by a fine of not less than one hundred dollars, nor more than five hundred dollars for each offense, or by confinement in the county jail for not less than ten or more than sixty days, or by both such fine and imprisonment, and such person so offending may be prosecuted under this section, either in the county where such person may be at the time of the commission of the offense, or in any county where such employee has been permitted or required to work in violation of this act.

Approved April 1, 1907.

CHAPTER 67.—*Blacklisting.*

SECTION 1. Either or any of the following acts shall constitute a discrimination against persons seeking employment:

(1) Where any corporation or receiver of same, doing business in this State, or any agent or officer of any such corporation or receiver, shall blacklist, prevent, or attempt to prevent, by word, writing, sign[,] list or other means, directly or indirectly, any discharged employee, or any employee who may have voluntarily left said corporation's service, from obtaining employment with any other person, company or corporation, except by truthfully stating in writing on request of such former employee, the reason why such employee was discharged, or his relationship to such company ceased.

(2) Where any corporation or receiver of same, doing business in this State, or any officer or agent of such corporation or receiver, shall by any means, directly or indirectly communicate to any other person or corporation any information in regard to a person who may seek employment of such person or corporation, and fails to give such person, in regard to whom the communication may be made, within ten days after demand therefor, a complete copy of such communication, if in writing, and a true statement of such communication

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if by sign, or other means, and the names and addresses of all persons or corporations to whom said communications shall have been made.

(3) Where any corporation or receiver of same, doing business in this State, or any agent or employee of such corporation or receiver, shall have discharged an employee, and such discharged employee demands a statement in writing, of the cause of his discharge, and such corporation, receiver, agent or employee thereof fails to furnish a true statement of same to such employee within ten days after such demand: *Provided*, That such demand by the employee for said statement shall be made in writing.

(4) Where any corporation or receiver of same, doing business in this State, or any agent or officer of same, shall have received any request, notice or communication, either in writing or by sign, word, list or otherwise, from any person, company or corporation, preventing or attempting or calculated to prevent the employment of a person seeking employment, and shall fail to furnish to such person seeking employment within ten days after a demand in writing therefor, a true statement of such request, notice or communication, and if in writing, a copy of same, and if a sign, the interpretation thereof, and the names and addresses of the person, company or corporation furnishing the same.

(5) Where any corporation or receiver of same, doing business in this State, or any officer or agent of such corporation or receiver discharging such employee shall have failed to give a discharged employee a true statement of the causes of his discharge within ten days after a demand in writing therefor, and shall thereafter furnish any other person or corporation any statement or communication in regard to such discharge, unless at the request of such discharged employee.

(6) Where any corporation or receiver of same, doing business in this State, or any officer or agent of such corporation or receiver shall discriminate against any person seeking employment on account of his having participated in a strike against another corporation.

(7) Where any corporation or receiver of same doing business in this State, or any officer or agent of such corporation or receiver, shall give any information or communication in regard to a person seeking employment having participated in any strike, unless such person seeking employment violated the law during his participation in said strike or in connection therewith, and unless such information is given in compliance with subdivision 1 of section 1 of this act.

SEC. 2. Any and all discriminations against persons seeking employment as herein defined, are hereby prohibited and are declared to be illegal.

SEC. 3. Every foreign corporation violating any of the provisions of this act is hereby denied the right, and is prohibited from doing any business within this State, and it shall be the duty of the attorney-general to enforce this provision by injunction or other proceeding in the district court of Travis County in the name of the State of Texas.

SEC. 4. Each and every person, company or corporation, who shall in any manner violate any of the provisions of this act shall for each and every offense committed forfeit and pay the sum of one thousand ($1,000) dollars, which may be recovered in the name of the State of Texas, in any county where the offense was committed, or where the offender resides, or in Travis County, and it shall be the duty of the attorney-general or the district or county attorney under the direction of the attorney-general to prosecute for the recovery of the same, and the fees of the prosecuting attorney for representing the State in proceedings under this act shall be over and above the fees allowed him under the general fee bill.

SEC. 5. In addition to the penalties and forfeiture herein provided for, every person violating any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction shall be punished by imprisonment in the county jail for not less than one month nor more than one year.

SEC. 6. In prosecution for the violation of any of the provisions of this act, evidence that any person has acted as the agent of a corporation in the transaction of its business in this State shall be received as prima facie proof that his act in the name, behalf or interest of the corporation of which he was acting as the agent, was the act of the corporation.

SEC. 7. Upon the application of the attorney-general or of any district or county attorney made to any justice of the peace in this State, and stating that he has reason to believe that a witness, who is to be found in the county of which such justice of the peace is an officer, knows of a violation of any of the provisions of this act, it shall be the duty of the justice of the peace to whom

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such application is made, to have summoned and to have examined such witness in relation to violations of any of the provisions of this act, said witness to be summoned as provided for in criminal cases. The said witness shall be duly sworn, and the justice of the peace shall cause the statements of the witness to be reduced to writing and signed and sworn to before him, and such sworn statement shall be delivered to the attorney-general, district or county attorney upon whose application the witness was summoned. Should the witness summoned as aforesaid fail to appear or to make statements of the facts within his knowledge under oath, or to sign the same after it has been reduced to writing, he shall be guilty of contempt of court and may be fined not exceeding one hundred dollars, and may be attached and imprisoned in the county jail until he shall make a full statement of all the facts within his knowledge with reference to the matter inquired about. Any person so summoned and examined shall not be liable to prosecution for any violation of the provisions of this act about which he may testify fully and without reserve.

SEC. 8. Said written cause of discharge, if true, when so made by such agent, company or corporation, shall never be used as the cause for an action for libel, either civil or criminal, against the agent, company or corporation so furnishing same.

Approved April 5, 1907.

CHAPTER 122.—*Hours of labor of telegraph operators, etc., on railroads.*

SECTION 1. It shall be unlawful for any person, corporation or association operating a railroad within this State to permit any telegraph or telephone operator who spaces trains by the use of the telegraph or telephone under what is known and termed "block system" defined as follows: Reporting trains to another office or offices, or to a train dispatcher operating one or more trains under signals, and telegraph or telephone levermen who manipulate interlocking machines in railroad yards or on main tracks out on the lines connecting side tracks or switches, or train dispatchers in its service whose duties substantially, as hereinbefore set forth, pertain to the movement of cars, engines or trains on its railroad by the use of the telegraph or telephone in dispatching or reporting or receiving or transmitting train orders as interpreted in this section, to be on duty for more than eight hours in any twenty-four consecutive hours: *Provided*, That the provisions of this act shall not apply to railroad, telegraph or telephone operators at stations where the services of only one operator is needed.

SEC. 2. Any person, corporation or association that shall violate section 1 of this act shall pay a fine of one hundred dollars for each violation of this act.

SEC. 3. It shall be unlawful for any railroad, telegraph or telephone operator to work more than eight hours in twenty-four consecutive hours at such occupation, and any such operator violating this section shall pay a fine in any sum not less than twenty-five dollars nor more than one hundred dollars: *Provided*, That in case of an emergency any operator may remain on duty for an additional two hours.

Approved April 16, 1907.

CHAPTER 129.—*Actions for personal injuries—Notice.*

SECTION 1. * * * no stipulation in any contract between a person, corporation or receiver operating railroad or street railway or interurban railroad and an employee or servant requiring notice of a claim by an employee or servant for damages for injury received to the person, or by a husband, wife, father, mother, child or children of a deceased employee for his or her death, caused by negligence as a condition precedent to liability, shall ever be valid. * * *

Approved April 18, 1907.

CHAPTER 138.—*Employment of women and minors in saloons.*

SECTION 19. Every retail liquor dealer or malt liquor dealer, * * * who shall have in his employ about his place of business, * * * any minor * * * shall be guilty of a misdemeanor, and upon conviction therefor shall be punished by a fine of not less than ten dollars nor more than two hundred dollars, or by imprisonment in the county jail for not longer than sixty days, or by both such fine and imprisonment.

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SEC. 25. No retail liquor dealer or retail malt dealer shall employ or suffer to be employed, any female as a servant, bartender or waitress, other than a member of his own family, in his place of business, * * * and any person violating the provisions of this section shall be deemed guilty of a misdemeanor and upon conviction shall be punished by imprisonment in the county jail for not more than twelve months or by a fine of not exceeding five hundred dollars, or both such fine and imprisonment.

Approved April 18, 1907.

CHAPTER 141.—*Examination, etc., of barbers.*

SECTION 1. It shall be unlawful for any person to follow the occupation of barber in this State unless he shall first have obtained a certificate of registration as provided for in this act: *Provided, however,* That nothing contained in this act shall apply to or affect any person who is now actually engaged in such occupation, except as hereinafter provided.

SEC. 2. A board of examiners to consist of three persons is hereby created to carry out and enforce the provisions of this act. Said board shall be appointed by the governor and shall consist of practical barbers who have been for at least five years prior to their appointment engaged in the occupation of barber in this State. Each member of said board shall serve a term of two years and until his successor is appointed and qualified, and shall take the oath provided for public officers. Vacancies shall be filled by the governor for the unexpired portion of this term.

SEC. 3. Said board shall elect a president, secretary and treasurer, shall have a common seal and shall have the power to administer oaths. The office of secretary and treasurer may be filled by the same person, in the discretion of the board of examiners. The secretary and treasurer shall each give a bond with two or more good and sufficient sureties, payable to and to be approved by the secretary of state in the sum of one thousand ($1,000) dollars, conditions [conditioned] that they will each of them faithfully perform the duties of their respective offices.

SEC. 4. Each member of said board shall receive a compensation of three ($3) dollars per day and actual expenses for actual service, and three (3) cents per mile for each mile actually traveled in attending the meetings of the board, which compensation shall be paid out of any moneys in the hands of the treasurer of said board: *Provided,* That said compensation and mileage shall in no event be paid out of the state treasury. Said board shall present annually to the governor, in the month of July, a detailed statement of the receipts and disbursements of the board during the preceding year.

SEC. 5. Said examining board shall hold practical examinations at least four times each year, said examinations to be held in cities in different parts of the State, distributed as evenly as possible, for the convenience of applicants, and such other examinations at such times and places as the examining board may from time to time determine. Whenever complaint is made to the board of examiners or to the state health officer that any barber shop within this State is kept in an unsanitary condition, or that a contagious disease has been imparted to any customer of such shop, a member of the board of examiners shall visit and inspect such shop, and if he finds such shop to be in an unsanitary condition, or finds that a contagious disease has been imparted to a customer of such shop, he shall proceed as provided in section 12 of this act.

SEC. 6. Every person now engaged as a barber in this State, shall within ninety (90) days after the approval of this act, file with the secretary of the board of examiners an affidavit setting forth his name, residence and length of time during which, and the place in which he has practiced such occupation, and shall pay to the treasurer of said board two ($2) dollars, and a certificate of registration entitling him to practice said occupation in this State shall be issued to him subject to the provisions of this act.

SEC. 7. Any person not engaged as barber at the time of the passage of this act desiring to obtain a certificate of registration under this act shall make application to the board of examiners, therefor, pay to the treasurer of said board an examination fee of two ($2) dollars, presenting himself at the next regular meeting of the board for the examination of applicants, and if he shows that he has studied the trade for two years as an apprentice under one or more practicing barbers, or practiced the trade for at least two years in this State or some other State in the United States, and he is possessed of the requisite skill in such trade to properly perform all the duties thereof, including his ability in

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preparation of the tools, shaving, hair cutting and all the duties and services incident thereto, and of sufficient knowledge concerning the common diseases of the face and skin to avoid the aggravation and spreading thereof in the practice of said trade, his name shall be entered by the board on the register hereafter provided for and a certificate of registration shall be issued to him authorizing him to practice said trade in this State subject to the provisions of this act.

SEC. 8. Nothing in this act shall prohibit any person from serving as a barber apprentice under a barber authorized to practice his trade under this act: *Provided*, That any person desiring to so work as an apprentice, must apply to said board to have his name entered in a register kept by the board for such purpose, giving the date of his apprenticeship, and after serving two (2) years in the trade, he will then be eligible to become a registered barber, by complying with the provisions of section 7 of this act: *Provided*, That nothing in this act shall apply to the students of the State University or other schools of the State who are or may be making their way through school by serving as barber, or those serving as barber in any of the eleemosynary institutions of the State; nor shall the provisions of this section apply to persons serving as barber in towns of 1,000 inhabitants or less.

SEC. 9. Said examining board shall furnish to each person to whom a certificate of registration is issued, a card or insignia bearing the seal of the board and the signature of its president and secretary, certifying that the holder thereof is entitled to practice the occupation of barber in this State, and it shall be the duty of the holder of such card or insignia to post the same in a conspicuous place in front of his working chair where it may be seen by all persons whom he may serve.

SEC. 10. The examining board shall keep a record of all its proceedings; shall also show what action was had on all applications, whether the applicant was registered or rejected by examination or otherwise, and such books shall be prima facie evidence of all matters required to be kept therein. The examining board shall have power to adopt rules and regulations prescribing the sanitary requirements of barber shops; subject to the approval of the state health officer, and shall have said rules and regulations printed and transmit a copy to each proprietor of a barber shop in the State. The failure of the proprietor of any barber shop in the State to comply with said sanitary rules and regulations shall be sufficient cause for the revocation of his certificate of registration; subject to the provisions of section 12 of this act.

SEC. 11. Said board shall keep a register in which shall be entered the names of all persons to whom certificates are issued under this act, and said register shall at all times be open to public inspection.

SEC. 12. If any shop be found in an unsanitary condition, or if the holder of any certificate be charged with imparting any infectious disease, the board of examiners shall immediately notify the local health officer thereof, and such shop may be quarantined and the barber so charged shall not practice his occupation until such quarantine shall be removed by the health officer.

SEC. 13. To shave or trim the beard or cut the hair of any person for hire or pay to the person performing such service or any other person, shall be construed as practicing the occupation of barber within the meaning of this act.

SEC. 14. Any person practicing the occupation of barber in this State, without having obtained a certificate of registration, as provided for in this act, or employing a barber who has not such a certificate, or falsely pretending to be qualified to practice such occupation under this act, or violation of any of the provisions of this act, shall be guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine not less than ten ($10) dollars nor more than twenty-five ($25) dollars.

Approved April 18, 1907.

CHAPTER 178.—*Mine regulations.*

SECTION 1. (a) Any shaft in process of sinking and any opening projected for the purpose of mining coal of all kinds shall be subjected to the provisions of this act.

(b) At the bottom of every shaft and every caging place therein a safe commodious passageway must be cut around said landing place, to serve as a traveling way by which employees shall pass from one side of the shaft to the other without passing under or on the cage.

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(c) The upper and lower landings at the top of each shaft, and the openings of each intermediate seam from or to the shaft shall be clear and free from loose materials and shall be securely fenced with automatic or other gates or bars so as to prevent either men or materials from falling into the shaft.

(d) Every hoisting shaft must be equipped with substantial cages fitted to guide rails running from the top to the bottom. Said cages must be safely constructed, they must be furnished with suitable boiler iron covers to protect persons riding thereon from falling objects, and they must be equipped with safety catches. Every cage on which people are carried must be fitted with iron bars, rings, or chains in proper place and in sufficient number to furnish a secure handhold for every person permitted to ride thereon. At the top landing, cage supports, where necessary, must be carefully set and adjusted so as to work properly and securely hold the cages when at rest.

In all cases where the human voice can not be distinctly heard there shall be provided a metal tube or telephone from the top to the bottom of the shaft or slope through which conversation may be held between persons at the bottom and top of such shaft or slope, and that there shall also be maintained an efficient system of signaling to and from the top of the shaft or slope and each seam or opening.

Every underground place on which persons travel, worked by self-acting engines, windlasses or machinery of any description shall be provided with practical means of signaling between the stopping places and the ends of the plane, and shall further be provided, at intervals of not more than sixty feet, with sufficient manholes for places of refuge.

Every mine shall be supplied with props and timbers of suitable length and size, and if from any cause the timbers are not supplied when required, the miners shall vacate any and all such working places until supplied with timber needed.

All openings worked out or abandoned portions of every operated mine likely to accumulate explosive gases or dangerous conditions shall be securely gobbed and blocked off from the operated portions thereof so as to protect every person working in such mines from all danger that may be caused or produced by such worked out portions of such mines.

SEC. 2. (a) Throughout every mine there shall be maintained currents of fresh air sufficient for the health and safety of all men and animals employed therein, and such ventilation shall be produced by a fan or some other artificial means: *Provided*, A furnace shall not be used for ventilating any mine in which explosive gases are generated.

(b) The quantity of air required to be kept in circulation and passing a given point shall be not less than one hundred cubic feet per minute for each person and not less than three hundred cubic feet per minute for each animal in the mine, measured at the foot of the downcast, and this quantity may be increased at the discretion of the inspector whenever in his judgment unusual conditions make a stronger current necessary. Said current shall be forced into every working place throughout the mine so that all parts of the same shall be reasonably free from standing powder smoke and deleterious air of any kind.

(c) The measurement of the current of air shall be taken with an anemometer at the foot of the downcast, at the foot of the upcast and at the working face of each division or split of the air current.

(d) The main current of air shall be split or subdivided [so] as to provide a separate current of reasonably pure air to every one hundred men at work, and the inspector shall have authority to order separate currents for smaller groups of men if in his judgment special conditions make it necessary.

(e) The air current for ventilating the stable shall not pass into the intake air current for ventilating the working parts of the mine.

(f) Whenever the inspector shall find men working without sufficient air he shall at once give the mine manager or operator notice and a reasonable time in which to restore the current, and upon his or their refusal or neglect to act promptly the inspector may order the endangered men out of the mine.

SEC. 3. Immediate notice must be conveyed by the miner or mine owner to the inspector upon the appearance of any large body of fire damp in any mine whether accompanied by any explosion or not, and upon the concurrence [occurrence] of any serious fire within the mine or on the surface.

SEC. 4. Cages on which men are riding shall not be lifted or lowered at a greater than six hundred feet per minute, except with the written consent inspector. No person shall carry any tools or material with him on motion, except for use in making repairs, and no one shall ride on a

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the other cage contains a loaded car. No cage having an unstable or self-dumping platform shall be used for the carriage of men or materials unless the same is provided with some convenient device by which said platform can be securely locked, and unless it is so locked whenever men or material are being conveyed thereon.

SEC. 5. No miner or other person shall carry powder into the mine except in the original keg or in a regulation powder can securely fastened, and the can in otherwise air-tight condition.

SEC. 6. It shall be the duty of the mine foreman to see that proper cut throughs are made in all the pillars at such distances as in the judgment of the mine inspector may be deemed requisite, not more than twenty yards nor less than ten yards apart, for the purpose of ventilation and the ventilation shall be conducted through said cut throughs into the rooms and entries by means of check doors made of canvas or other material, placed on the entries or in other suitable places, and he shall not permit any room to be opened in advance of the ventilating current. Should the mine inspector discover any room, air way or other working place being driven in advance of the air current contrary to the requirements of this section he shall order the workmen in such places to cease at once until the law is complied with.

SEC. 7. At any mine where the inspector shall find fire damp is being generated so as to require the use of a safety lamp in any part thereof, the operator of such mine upon receiving notice from the inspector that one or more such lamps are necessary for the safety of the men in the mines, shall at once procure and keep for use such number of safety lamps as may be necessary.

SEC. 8. It shall be unlawful for any miner, workman or other person knowingly or carelessly to injure any shaft, safety lamp, instrument, air course or brattice, or to obstruct or throw open an air way, or to carry any open lamp or lighted pipe or fire in any form into a place worked by the light of safety lamps or within three feet of any open powder, or to handle or disturb any part of the hoisting machinery, or to enter any part of the mine against caution, or to do any willful act whereby the lives or health of persons working in mines or the security of the mine machinery thereof is endangered.

SEC. 9. It shall be the duty of every operator to post on the engine house and at the pit top of his mine, in such manner that the employees of the mine can read them, rules not inconsistent with this act, plainly printed in the English language, which shall govern all persons working in the mine. And the posting of such notice, as provided, shall charge all employees of such mine with legal notice of the contents thereof.

SEC. 10. The owner or operator of every mine shall provide adequate and accurate scales for weighing coal, and it shall be the duty of the mine inspector to examine such scales and if same are not found to be accurate he shall notify the owner to repair same, and if such owner fails or refuses to repair same within a reasonable time said inspector shall institute proceedings under the law against the proper parties.

SEC. 11. The employees in any mine in this State shall have the right to employ a check weighman at their own option and their own expense.

SEC. 12. No miner or other person employed in a mine shall use any kind of oil other than a good quality of lard oil for lighting purposes, except when repairing downcast or upcast shafts.

SEC. 13. Any person who shall willfully violate any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine not exceeding five hundred dollars, or imprisonment in the county jail for a period not exceeding six months.

SEC. 14. For the purpose of securing efficiency in the mine inspection service a board of examiners, to be known as the state mining board, whose duty it shall be to make formal inquiry into and pass upon the practical and technical qualifications and personal fitness of persons seeking appointments as state inspector of mines, shall be appointed by the governor.

SEC. 15. Said board shall be composed of seven members, three of whom shall be practical miners, three shall be mine operators, and it shall be the first duty of the six members thus appointed to nominate to the governor the seventh member of said board: *Provided*, That if the six members aforesaid shall fail for a period of ten days after their appointment to so nominate the seventh member, the same shall be appointed by the governor. Such board shall be appointed by the governor within ninety days after the passage of this act. Said board shall hold office for a period of two years and until their successors have been appointed and qualified.

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SEC. 16. The board shall meet in the capitol building at Austin, within thirty days after its appointment and biennially thereafter, for the purpose of hearing applications for the office of state mining inspector. It shall be the duty of the board to thoroughly examine all applicants who may come before it, and to select from among such applicants the person who in its opinion is best qualified to perform the duties of state mining inspector, and upon the nomination of said board the governor shall appoint the person so recommended.

SEC. 17. The state mine inspector shall be a citizen of the United States, and shall have resided in the State of Texas for one year, of temperate habits, of good repute, a man of personal integrity, shall have attained the age of thirty years, and shall have had at least five years experience working in and around coal mines, and shall not have any pecuniary interest whatever in any mine in this State. He shall hold office for a period of two years unless sooner removed as provided herein.

SEC. 18. It shall be the duty of the state mining board to exercise supervision over the acts of the state mine inspector, and in the event of his incompetency or the neglect of his duty being proved to the board, said board shall recommend to the governor that he be removed from office and his successor shall be chosen as herein provided.

SEC. 19. The state mining board shall meet twice each year and at such time and place as the majority may select for the purpose of receiving reports from the inspector and instructing him in the performance of his duty.

SEC. 20. The members of the state mining board shall receive as compensation for their services the sum of five dollars per day for a period not exceeding thirty days in any one year and traveling expenses in going to and returning from board meetings.

SEC. 21. It shall be the duty of the state mine inspector to enforce the provisions of this act under the instruction of the state mining board, and to make report to said board at its semiannual meetings and oftener if required. He shall receive for his services the sum of fifteen hundred dollars per year, and actual traveling expenses incurred in the discharge of his duty: *Provided*, That his traveling expenses shall not in any one year exceed the sum of $500.

Approved April 30, 1907.

UTAH.

ACTS OF 1907.

CHAPTER 33.—*Mine regulations—Care of injured persons.*

SECTION 1. At all mines in the State of Utah where ten or more men are employed, it shall be the duty of the operator or owners thereof to keep readily accessible a properly constructed stretcher, a woolen blanket, a waterproof blanket and a supply of linseed oil, antiseptic gauze, carbolated vaseline, sponges, soap, liniment, carbolic acid, rubber bandages, suitable towels and wash basins, all for the comfort and treatment of anyone injured in such mine.

SEC. 2. Any willful neglect, refusal or failure to do the things required to be done by the preceding section, or any attempt to obstruct or interfere with the complying with the provisions of this act, shall be deemed a misdemeanor punishable by a fine in any sum less than three hundred dollars, or, by imprisonment in the county jail not to exceed six months, or by both such fine and imprisonment.

Approved this 11th day of March, 1907.

CHAPTER 76.—*Interference with employment.*

SECTION 1. It shall be unlawful for any person, persons, association of persons, combination of persons, or body of persons to interfere with the rights of any individual engaged in labor, to exercise his full privileges under the Constitution of this State or of the United States, as to where he shall be employed, by whom he shall be employed and at what compensation he shall be employed.

SEC. 2. Anyone violating the provisions of this act shall be guilty of a misdemeanor.

Approved this 14th day of March, 1907.

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CHAPTER 131.—*Bureau of statistics.*

SECTION 1. Section 1, chapter 55 Laws of Utah 1901 is hereby amended to read as follows:

Section 1. A state bureau of statistics is hereby created and established and the said bureau shall be under the control of the state auditor. The state auditor shall be ex officio the commissioner of said state bureau of statistics.

SEC. 3. The state auditor who by this act is made ex officio the commissioner of the state bureau of statistics shall appoint a chief clerk or deputy commissioner who shall receive such compensation as [is] provided by law.

Approved this 23d day of March, 1907.

CHAPTER 154.—*Examination, etc., of barbers.*

SECTION 1. Sections 1, 5, 6, 9, 10, 11, 13 and 14 of chapter 137, Laws of Utah, 1903, are hereby amended to read as follows:

Section 1. It shall be unlawful for any person to follow the occupation of a barber, barber's apprentice or to conduct a barber shop, barber school or barber college in this State unless he shall have first obtained a certificate of registration as provided in this act. A person so engaged less than six months shall be considered an apprentice and at the expiration of six months of such employment shall be subject to the provisions of this act as hereinafter provided. No person practicing the occupation of a barber in any barber school or college in this State shall serve a person afflicted with erysipelas, eczema, impetigo, sycosis, tuberculosis, or any other contagious or infectious disease. Any person so afflicted is hereby prohibited from being barbered in any barber shop, barber school or college in this State.

Any violation of this section will be considered a misdemeanor as provided for in this act.

Sec. 5. Such board shall have power to adopt reasonable rules and regulations prescribing the sanitary requirements of a barber shop, barber school or college, subject to the approval of the state board of health and to cause the rules and regulations so approved to be printed in a suitable form and to transmit a copy thereof to the proprietor of each barber shop, barber school or college in this State.

It shall be the duty of every proprietor or person operating a barber shop, barber school or college in this State to keep posted in a conspicuous place in his shop, school or college, so as to be easily read by his customers a copy of such rules and regulations. A failure of any such proprietor or manager to keep such rules so posted, or to observe the requirements thereof, shall be sufficient grounds for the revocation of his license, but no license shall be revoked without a reasonable opportunity being offered to such proprietor or manager to be heard in his defense. Any member of said board shall have power to enter and make examination of any barber shop, barber school or college in this State during business hours for the purpose of ascertaining the sanitary condition thereof. Any barber shop, barber school or college in this State in which tools, appliances and furnishings in use therein are kept in an unclean or insanitary condition so as to endanger health, is hereby declared to be a public nuisance and the proprietor thereof shall be subject to prosecution and punishment therefor. Each member of said board shall have power to administer oaths, and the board may at its discretion appoint deputies who shall exercise the powers herein granted to said board, said deputies to serve without pay.

Sec. 6. Each member of said board shall receive a compensation of four dollars per day for actual service, and ten cents for each mile actually traveled in attending the duties of the board, which compensation shall be paid out of any moneys in the hands of the treasurer of said board, after an allowance thereof by the board upon an itemized and verified claim thereof being filed with the secretary by the member claiming the same, but in no event shall any part of the expense of the board or any member thereof be paid out of the state treasury.

Sec. 9. Every person now engaged in the occupation of a barber in this State shall, within 90 days after the approval of this act, file with the secretary of said board an affidavit setting forth his name, residence and the length of time during which, and the place where he has practiced such occupation, and shall pay to the treasurer of said board one dollar, and a certificate of registration entitling hi[illegible] said occupation thereupon shall be issued to him.

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Sec. 10. Any person other than those mentioned in section 9 desiring to obtain a certificate of registration under this act shall make application to said board therefor, and shall pay to the treasurer of said board an examination fee of $5.00, and shall present himself at the next regular meeting of the board for the examination of applicants, whereupon said board shall proceed to examine said person, and being satisfied that he is above the age of 16 years, of good moral character, free from contagious or infectious diseases; that he had either studied the occupation for six months as an apprentice under a qualified practicing barber, or that he has studied the occupation in a barber school or college as defined by this act, for six months or has practiced the occupation for at least six months and is possessed of a requisite skill in said occupation to properly perform all the duties thereof, including his ability in the preparation of tools, shaving, hair cutting and a thorough knowledge of the sanitary requirements of a barber shop, barber school or college, and all the duties and services incident thereto, his name shall then be entered by the board in the register hereinafter provided for, and a certificate of registration shall be issued to him authorizing him to practice said occupation in this State: *Provided*, That whenever it appears that the applicant has insufficient knowledge of the sanitary requirements of a barber shop, school or college to prevent the spread of disease, the board may withhold from him a qualified barber certificate if it shall appear that he is not qualified to practice the said occupation.

Sec. 11. A barber school or college is hereby declared to be a school or college conducted by suitable persons who are authorized to practice the occupation of a barber in this State, and in which all instruction is given by competent persons so authorized and in which the course and period of training shall comply with the rules and regulations of said board specifically adopted for the government of barber schools or colleges.

Sec. 13. Every apprentice, in order to avail himself of the provisions of this act, must file with the secretary of the board a statement in writing showing the name and place of business of his employer, the date of commencement of employment with him, and the full name and age of said apprentice, and shall pay to the treasurer of said board a fee of one dollar.

Sec. 14. Said board shall furnish to each person to whom a certificate of registration is issued and to each registered apprentice a card or insignia bearing the seal of the board and the signature of its president and secretary, certifying that the holder thereof is entitled to practice the occupation of a barber's apprentice in this State, and it shall be the duty of the holder of such card or insignia to post the same in a conspicuous place in front of his working chair, where it may readily be seen by all persons whom he may serve. Said card or insignia shall be renewed on or before the first day of July of each year and the holder of said certificate of registration or apprentice card shall pay to the secretary of said board the sum of one dollar for such renewal card or insignia. Upon the failure of any holder of a certificate of registration or apprentice card to apply for a renewal of his card or insignia on or before the first day of July in each year, his said certificate or apprentice card may be revoked by said board, subject to the provisions of section 16 of this act.

Approved this 25th day of March, 1907.

WASHINGTON.

ACTS OF 1907.

CHAPTER 20.—*Hours of labor of employees on railroads.*

SECTION 1. It shall be unlawful for any common carrier by railroad or any of its officers or agents, to require or permit any employee engaged in or connected with the movement of any train to remain on duty more than sixteen consecutive hours, except when by casualty occurring after such employee has started on his trip; or, except by accident or unavoidable delay of trains scheduled to make connection with the train on which such employee is serving, he is prevented from reaching his terminal; or, to require or permit any such employee who has been on duty sixteen consecutive hours to go on duty without having had at least ten hours off duty; or, to require or permit any such employee who has been on duty sixteen hours in the aggregate in any twenty-four

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hour period to continue on duty without having had at least eight hours off duty within the twenty-four hour period.

SEC. 2. That any such common carrier, or any of its officers or agents violating any of the provisions of this act is hereby declared to be guilty of a misdemeanor, and upon conviction thereof shall be liable to a penalty of not less than one hundred or more than one thousand dollars for each and every such violation to be recovered in a suit or suits to be brought by the attorney-general; and it shall be the duty of the attorney-general to bring such suits upon duly verified information being lodged with him of such violation having occurred, in any superior court; and it shall also be the duty of the railroad commission to fully investigate all cases of the violation of this act, and to lodge with the attorney-general information of any such violation as may come to its knowledge.

Approved by the governor February 18, 1907.

CHAPTER 128.—*Employment of children—Age limit.*

[See Bulletin No. 73, p. 806.]

CHAPTER 138.—*Railroads—Blocking frogs, etc.*

SECTION 1. Section 1 of an act * * * approved March 6th, 1899, is hereby amended to read as follows:

Section 1. Any person or persons, railroad companies or corporations, owning or operating a railroad or railroads in this State, shall be and are hereby required on or before the first day of October, 1899, to so adjust, fill, block and securely guard the frogs, switches and guard rails on their roads as to protect and prevent the feet of employees and other persons from being caught therein. Any railroad operating within this State, shall not employ or use as flagman any person or persons who can not read, write and speak the English language.

Approved by the governor March 12th, 1907.

CHAPTER 175.—*Saw guards in shingle mills.*

SECTION 1. An act entitled "An act for the purpose of protecting knot sawyers in shingle mills, and requiring owners and operators of shingle mills to protect knot saws with metallic saw guards, imposing penalties for failure to do so, and declaring the law of negligence in cases where any person is injured by any knot saw not protected by metallic saw guard," approved March 1st, 1895, is hereby repealed.

Approved by the governor March 15, 1907.

CHAPTER 200.—*Inspection of steam vessels.*

SECTION 1. The commissioner of labor shall be charged with the administration of the provisions of this act, shall employ the necessary inspectors to enable him to carry said provisions into effect, and shall exercise supervision over them in the performance of their duties.

SEC. 2. The commissioner of labor shall annually, or oftener if he has good cause to believe it reasonable, inspect, or cause to be inspected, every steam vessel or other vessel operated by machinery engaged in carrying passengers for hire or towing for hire, excepting vessels which are subject to inspection under the laws of the United States, examine carefully her hull, boats and other equipment, examine her engine and boilers, ascertain how long it will be safe to use the same, determine the pressure of steam to be allowed and so regulate the fusible plugs, safety valves and steam cocks as to insure safety, and he may require such changes, repairs and improvements to be adopted and used as he may deem expedient for the contemplated route. He shall also fix the number of passengers that may be transported. He shall also, whenever he deems it expedient, visit any vessel licensed under this act and examine into her condition for the purpose of ascertaining whether or not any party thereon having a certificate from him has conformed to and obeyed the conditions of such certificate and the provisions of this act. The owner, master, pilot, captain or engineer of such vessel shall answer all reasonable questions, and shall give all the information in his or their power, in regard to said vessel, her machinery and the manner of managing the same. In case of damage by fire or by explo-

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sion or by means of an electrical apparatus, he may investigate the cause thereof, and if found by him to have been occasioned by a violation of any of the provisions of this act, or of the orders, regulations and requirements issued by him, he shall so certify to the prosecuting attorney of the county where such violation occurred, together with the names of the persons guilty thereof and of the witnesses.

SEC. 3. The commissioner shall also test the boilers of all steam vessels, before the same shall be used, and at least once in every year thereafter. In subjecting to the hydrostatic test, boilers called and usually known under the designation of high pressure boilers, the hydrostatic pressure applied must be in proportion of one hundred and fifty pounds to the square inch to one hundred pounds to the square inch of the steam pressure allowed. And in subjecting to the hydrostatic test, that class of boilers usually designated and known as low pressure boilers, the commissioner shall allow as the working power of each new boiler, a pressure of only three-fourths the number of pounds to the square inch, to which it shall have been subjected by the hydrostatic test, and found to be sufficient therefor; but should said commissioner be of the opinion that such boiler, by reason of its construction or material will not safely allow so high a working pressure he may, for reasons specifically stated in his certificate, fix the working pressure of such boiler at less than three-fourths of said test pressure; and no boiler or pipe, or any of the connections therewith, shall be approved, which is made in whole or in part, of bad material, or is unsafe in its form, or dangerous from defective workmanship, age, use or other cause. In addition to the hydrostatic test as herein provided, the commissioner may cause a hammer test to be made and an internal examination of such boiler or boilers so tested, whenever deemed necessary. Any boiler having been in use ten years or more may be drilled at the bottom of shell or boiler, and also at such other points as the inspectors may direct to determine the thickness of such material at those points, and the general condition of such boiler or boilers at the time of inspection and the steam pressure allowed shall be determined by such ascertained thickness and general condition of the boiler. He shall also see that all connections to the said boiler or engines are of suitable material, size and construction; and that the boiler, machinery and appurtenances are such as may be employed with safety in the service to be performed. He shall also satisfy himself that the safety valves are of suitable dimensions and that the weights of the same are properly adjusted, so as to allow no greater pressure than the maximum amount prescribed by him; and that there is a sufficient number of gauge cocks, properly attached to the boiler, so as to indicate the quantity of water therein; and suitable steam gauges to correctly show the amount of steam carried; and as to any other matter connected with such steam vessel or the machinery thereof, that to said commissioner shall seem necessary to the safety of her passengers and crew. And he shall make such inspection, examination and test of naphtha launches and electric launches and their apparatus and machinery, as will enable him to determine whether they can be safely used in navigation.

SEC. 4. The commissioner, if satisfied that such vessel is in all respects safe and conforms to the requirements of this act, shall make and subscribe duplicate certificates, setting forth the age of the vessel, the date of inspection, the name of the vessel, the name of the owner, the master, the number of licensed officers and crew which he deems necessary to manage the vessel with safety, the number of boats and life-preservers required, and the number of passengers that she can safely carry, and if a steam vessel, the age of the boiler, and the pressure of steam she is authorized to carry. One of such certificates shall be kept posted in some conspicuous place on the vessel to be designated by the commissioner in the certificate and the other copy shall be kept by the commissioner and by him recorded in a book to be kept for that purpose. If the commissioner refuses to grant a certificate of approval, he shall make a statement in writing, giving his reasons for such refusal, and deliver the same to the owner or master of the vessel.

SEC. 6. All steamboats and other vessels to which this act is applicable, shall hereafter be so constructed that the woodwork about the boilers, chimneys, fire boxes, cook houses, stove and steam pipes, or any machinery or apparatus involving danger of fire, where such woodwork is exposed to ignition, shall be so shielded by some incombustible material, that the air may circulate freely between such material and woodwork or other ignitible substances, and before granting a certificate of inspection, the commissioner shall require that all other

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necessary provisions be made throughout such vessel, as he may judge expedient to guard against loss or damage by fire.

SEC. 13. Whoever intentionally loads or obstructs, or causes to be loaded or obstructed, in any way, the safety valve of the boiler, or employs any other means or device whereby the boiler may be subjected to a greater pressure than the amount allowed by the commissioner's certificate, or intentionally deranges or hinders the operation of any machinery or device employed to denote the stage of the water or steam in any boiler, or to give warning of any approaching danger, or intentionally permits the water to fall below the prescribed low water limit of the boiler, shall forfeit to the State of Washington the sum of five hundred dollars for each violation.

SEC. 14. Every person employed as master, pilot or engineer on board of a steam vessel or a vessel propelled by machinery, carrying passengers for hire or towing for hire, shall be examined by the commissioner as to his qualifications, and if satisfied therewith he shall grant him a license for the term of one year for such boat, boats or class of boats as said commissioner may specify in such license. In a proper case, the license may permit and specify that the master may act as pilot, and in case of small vessels also as engineer and pilot. The license shall be framed under glass, and posted in some conspicuous place on the vessel on which he may act. Whoever acts as master, pilot or engineer, without having first received such license, or upon a boat or class of boats not specified in his license, shall be liable to a penalty of fifty dollars for each day that he so acts, except as in this act otherwise specified, and such license may be revoked by the commissioner for intemperance, incompetency or willful violation of duty.

SEC. 20. No master, engineer or other person having charge of the boiler or apparatus for the generation of steam of any steamboat or vessel shall create, or allow to be created any undue or unsafe quantity of steam in order to increase the speed of such boat or to excel another boat in speed. Any person violating provisions of this section shall forfeit to the State of Washington the sum of five dollars for every such violation.

SEC. 21. Every master of a steamboat or vessel who shall violate any of the preceding sections of this act shall, for every such violation, forfeit to the State of Washington the sum of two hundred and fifty dollars, unless a different penalty is prescribed.

SEC. 23. The master of every vessel shall keep a copy of the preceding sections of this act posted in a conspicuous place on such vessel for the inspection of all persons on board thereof. Every master violating the provisions of this section shall forfeit to the State of Washington, twenty-five dollars, and the additional sum of twenty-five dollars for each month while such violation continues.

SEC. 24. The commissioner shall on or before the first day of January in each year, make a verified report to the governor, containing a detailed statement of the names and number of vessels examined and licensed, the names and number of vessels to which licenses were refused and stating the reasons for the refusal, the names and number of persons examined and licensed, the names and number to whom licenses were refused and stating the reasons therefor, and may include in such report any other information he may deem desirable.

SEC. 26. For each inspection provided for in sections two and three of this act the owner or master of each vessel shall pay the commissioner of labor an inspection fee, which shall not be less than five dollars, nor more than twenty dollars, to be fixed by the commissioner of labor with reference to the size of the vessel inspected. For each license issued under section eighteen of this act the person so licensed shall pay to the commissioner of labor the sum of five dollars. All of the fees received from this source shall be accounted for by the commissioner of labor to the state treasurer, and credited to the general fund.

SEC. 27. The inspectors provided for in this act shall receive seven dollars per diem for the time actually engaged in making the inspections and examinations provided for herein, and shall be paid necessary traveling expenses when making such inspections and conducting such examinations at other than the domicile of said inspectors.

SEC. 28. Any inspector duly employed by the commissioner of labor for the execution of any of the provisions of this act, shall be deemed to be a deputy of said commissioner for the purposes hereof, and may perform any act and exercise any authority herein prescribed for the commissioner of labor.

Approved by the governor March 15th, 1907.

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CHAPTER 205.—*Inspection of factories, etc.*

[See Bulletin No. 73, pp. 969 to 972.]

CHAPTER 224.—*Railroad employees—Purchase of uniforms.*

SECTION 1. It shall be unlawful for any railroad or other transportation company doing business in the State of Washington, or of any officer, agent or servant of such railroad or other transportation company, to require any conductor, engineer, brakeman, fireman, purser, or other employee, as a condition of his continued employment, or otherwise to require or compel, or attempt to require or compel, any such employees to purchase of any such railroad or other transportation company or of any particular person, firm or corporation or at any particular place or places, any uniform or other clothing or apparel, required by any such railroad or other transportation company to be used by any such employee in the performance of his duties as such; and any such railroad or transportation company or any officer, agent or servant thereof, who shall order or require any conductor, engineer, brakeman, fireman, purser, or other person in its employ, to purchase any uniform or other clothing or apparel as aforesaid, shall be deemed to have required such purchase as a condition of such employee's continued employment.

SEC. 2. Any railroad or other transportation company doing business in the State of Washington, or any officer, agent or servant thereof, violating any of the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine in any sum not less than one hundred dollars ($100) nor more than five hundred dollars ($500), or by imprisonment in the county jail of the county where the misdemeanor is committed, not exceeding six months.

Approved by the governor March 16th, 1907.

CHAPTER 226.—*Railroads—Accidents—Safety appliances.*

SECTION 10. There shall be added to said act [chapter 81, Acts of 1905] to be designated as section 28 the following:

Section 28. The [railroad] commission is hereby authorized and directed to investigate all accidents that may occur upon any railroad operating in this State resulting in loss of life to any passenger or employee. Said commission is hereby authorized to administer oaths and examine such witnesses as it may deem necessary and proper to thoroughly ascertain the cause and for the purpose of fixing the responsibility therefor. Such examination and investigation may be made by the commission or any one of the commissioners, or the same may be made by its inspector of tracks and equipment, and such inspector shall have the right to administer oaths and examine witnesses in case the investigation is made by him. The commission shall report to the governor from time to time the result of all such investigations.

SEC. 13. There shall be added to said act to be designated as section 31 the following:

Sec. 31. It shall be unlawful for any railroad or railway corporation or company owning and operating, or operating, or that may hereafter own or operate, a railroad in whole or in part in this State to knowingly or negligently use or operate any car, tender or locomotive, that is defective, or any car or locomotive upon which the machinery or attachments thereto belonging are in any manner defective, or to knowingly operate its train over any defective or dangerous track, bridge or structure.

SEC. 14. There shall be added to said act to be designated as section 32 the following:

Sec. 32. Every railroad corporation owning or operating a railroad or part of a railroad in this State shall on or before the first day of January, 1908, equip and furnish all cars owned or leased and used by it in its service in this State with automatic couplers, coupling automatically, which can be coupled and uncoupled without the necessity of men going between the ends of the cars, and shall equip, furnish and operate all cars in its passenger service, and not less than 80 per cent. of such cars in its freight service with perfectly acting air brakes, and also with good and sufficient hand brakes, and in such a manner as to enable the engineer under ordinary conditions to control the speed of the train without the use of hand brakes, and no freight train shall after such date be run by any such railroad corporation over any part of its road lying within this State, unless the cars composing such freight train are so furnished and

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equipped. All freight cars shall be equipped and provided with proper grab irons, ladders and stirrups, securely bolted on so as to enable the employees to climb upon and off such cars with safety: *Provided, however*, That this section shall not apply to boarding and outfit cars when moved as work trains, or to trains consisting wholly of logging trucks and a passenger car or caboose, or to freight trains consisting of not to exceed fifty per cent. of logging trucks.

SEC. 15. There shall be added to said act to be designated as section 33 the following:

Sec. 33. An inspector of safety appliances and tracks, bridges and structures shall be appointed by the railroad commission of Washington, at a salary of not to exceed two thousand dollars per annum. Such inspector shall not be an officer of any railroad operating in this State, nor shall he be interested, directly or indirectly, in the stock or bonds of any railroad company, and he shall have had at least seven years actual experience in the operating department of some railroad. Before entering on his duties, the said inspector shall give a bond to the State of Washington in the sum of five thousand dollars secured by a bond and security company acceptable to the railroad commission conditioned for the faithful performance of his duties, and shall make and file an affidavit that he is not an officer or director of any railroad company, and is not directly or indirectly interested in the stock or bonds of any railroad company, and such other facts as are required of employees of the State.

SEC. 16. There shall be added to said act to be designated as section 34 the following:

Sec. 34. It shall be the duty of the inspector to inspect the couplers, air brakes and automatic power brakes found on the cars and engines, and the grab irons, ladders, stirrups and hand brakes on all freight cars of any railroad in Washington, and make such report of his inspection to the railroad commission as it may order and require, reporting all cars, tenders and engines, giving the number of the same, the road on which they are found and the road owning same if known which is found to have a defective coupler, brake or other defect rendering the operation thereof in any way dangerous, particularly describing such defects. He shall on discovering a defective coupler, brake or other defect rendering the use of such car, tender or engine dangerous immediately report the same to the superintendent of the road on which it is found and to the agent thereof at the nearest station, describing the defect. Such inspector may, on the discovery of the defective coupler, brake or other defect rendering the use of such car, tender or engine dangerous condemn such car, tender or engine, and order the same out of service until repaired and put in good working order. He shall in addition thereto inspect the tracks, bridges, and structures of all lines of railroad operating in this State, and in case he finds such track, bridge or structure defective or unsafe in any particular, he shall report such condition to the railroad commission and in addition thereto shall report the same to the divisional superintendent of such railroad. In case any track is found so defective as to be dangerous to the employees or traveling public for a train or trains to be operated over the same, the inspector is hereby authorized to condemn such track, bridge, or structure and notify the railroad commission and the railroad divisional superintendent of such road of his action concerning the same, reporting in detail the defects complained of, and the work and improvements necessary to be done to repair such defects. He shall also report to the railroad commission of Washington the violation of any law governing, controlling or affecting the conduct of railroads within this State. Such inspector shall have the right and privilege of riding upon any engine either on passenger or freight trains, or on caboose of freight train for the purpose of inspecting the track of any road in this State: *Provided*, That the engineer or conductor in charge of any such engine or caboose may require such inspector to produce his authority under the seal of the railroad commission of Washington showing that he is such inspector. The inspector shall be an employee of the railroad commission of Washington, and he shall perform in addition to the duties above described such other and further duties as the commission may require of him.

SEC. 17. There shall be added to said act to be designated as section 35 the following:

Sec. 35. Whenever the railroad commission of Washington has reasonable grounds to believe either on complaint made to it or otherwise that any of the tracks, bridges or other structures of any railroads in this State, or the couplers, air brakes, or automatic power brakes of any cars, tenders and engines, or the grab irons, ladders, and stirrups of any freight car used in this State are in a condition which renders them or any of them dangerous or unfit

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for the transportation of passengers or the carrying of freight, it shall forthwith cause the same to be inspected and examined, and if on such examination of said commission or its inspector or agents it is of the opinion that any such tracks, bridges, structures, cars, tenders or engines are unfit for the transportation of passengers and freight with safety, it shall immediately give to the superintendent or other executive officer of the company operating such road notice of the condition thereof and of the repairs or reconstruction necessary to place the same in a safe condition, and it may also prescribe the rate of speed for trains passing over such dangerous or defective track, bridge or other structure until the repairs or reconstruction required are made, and may also prescribe the time within which such repairs or reconstructions must be made, or if in its opinion it is needful or proper, it may forbid the running of passenger trains over such defective track, bridge or structure until such repairs are made. If any superintendent or other executive officer receiving such notice and order neglects for two days after receiving the same to direct the proper subordinate officer to run the trains over such defective track, bridge or other structure at a speed not greater than that so prescribed, or if the running of such trains is forbidden, then to stop running trains over the same, or if any engineer, conductor or other employee knowingly disobeys such order, every superintendent, officer, engineer, conductor or employee so offending shall be fined in any sum not exceeding five hundred dollars, or be imprisoned for any period not exceeding one year, or both, at the discretion of the court; and the company operating such road, if it neglects or without good cause fails to make the repairs or reconstruction prescribed by the commission in the time limited shall for each day that such repair or reconstruction is delayed beyond the time prescribed, forfeit and pay to the State the sum of one hundred dollars. * * *

SEC. 18. There shall be added to said act to be designated as section 36 the following:

Sec. 36. Any railroad whose superintendent, officer or agent shall receive such notice of a defective coupler, brake or other defect rendering the use of such car, tender or engine dangerous shall cause the same to be immediately repaired. On receiving from the inspector an order condemning any car, tender or engine, the employees of the road in charge of said car, tender or engine shall put the same out of service at the first freight divisional terminal, or, in case the inspector so orders, at the first station reached. Any railroad whose superintendent, officer or agent shall receive notice of a defect in the track, or any bridge or other structure, shall cause the same to be immediately repaired and on receiving from the commission an order condemning the track, bridge or structure, no train excepting for the purpose of repairing shall be run over the same until the defects pointed out are remedied and repaired.

SEC. 19. There shall be added to said act to be designated as section 37 the following:

Sec. 37. It shall be the duty of the general manager, superintendent or other proper officer of every railroad operating in this State to make to the railroad commission of Washington at its office a monthly report under oath of all the collisions of trains, or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such road and actually on duty, which report shall state the nature and cause thereof and the circumstances connected therewith: *Provided, however*, That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report; that the railroad commission of Washington is hereby authorized to prescribe for such railroad a method and form of making the report in this section provided.

SEC. 20. There shall be added to said act to be designated as section 38 the following:

Sec. 38. Any railroad, divisional superintendent, agent, officer or employee of any railroad operating in this State who shall willfully and knowingly violate any of the provisions of this act shall be deemed guilty of a misdemeanor and on conviction thereof shall be fined in any sum not exceeding five hundred dollars.

Approved by the governor March 16th, 1907.

CHAPTER 231.—*Employment of children—School attendance.*

[See Bulletin No. 73, p. 808.]

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WEST VIRGINIA.

ACTS OF 1907.

CHAPTER 59.—*Hours of labor of telegraph operators, etc., on railroads.*

SECTION 1. It shall be unlawful for any person, corporation or association, operating a railroad within this State to permit any person employed by them, or on their railroad, in the capacity of telephone or telegraph operator, whose duty it is to space or block trains or engines, or handle train orders governing the movement of trains or engines, or handling interlocking switches governing the movement of trains or engines, to permit such telephone or telegraph operator so employed to be on duty more than eight hours in any twenty-four consecutive hours: *Provided*, That the provisions of this act shall apply only to such parts of a railroad where three or more passenger trains pass each way in twenty-four consecutive hours, or where ten or more freight trains pass each way in twenty-four consecutive hours, or at any office where said telegraph or telephone operators are employed twenty or more hours in twenty-four consecutive hours: *And provided further*, That in case of necessity caused by the sickness of any such operators or by an accident on such railroad, such telephone and telegraph operators may be permitted to be on duty for a period of twelve consecutive hours in any twenty-four consecutive hours, but such extension of time shall extend only for a period long enough to enable such railroad company to supply the required number of operators at such office, and shall in no case extend over a period of more than two days, nor under this provision shall it be lawful for any telegraph or telephone operator to be on duty twelve consecutive hours in any twenty-four consecutive hours for more than three times in any calendar month; but nothing in this act shall prevent any such company and operator agreeing to a longer day than eight hours, but in no case shall any such operator be permitted to be on duty longer than twelve consecutive hours in any twenty-four consecutive hours under such agreement.

SEC. 2. Any person, corporation or association convicted of violating the provisions of this act shall be guilty of a misdemeanor and pay a fine of one hundred dollars for the first offense, and for each offense committed after the first conviction hereunder, pay a fine of three hundred dollars.

Approved by the governor February 25, 1907.

CHAPTER 78.—*Mine regulations.*

SECTION 1. There is hereby created an executive department to be known as the "department of mines" which shall have for its purpose the supervision of the execution and enforcement of all State laws pertaining to the inspection of mines, heretofore and hereafter enacted for the safety of persons employed within or at the mines within this State, and the protection of mine property and other property used in and in connection therewith; and the said department of mines shall be in charge of an official to be known as the chief of the department of mines, who shall have full charge of said department, and who shall superintend and direct the inspection of mines as herein provided and as provided by any other State law not in conflict with this act.

The chief of the department of mines shall keep a record of all inspections made by himself and the district mine inspectors, which shall be a permanent record properly indexed; the record of the department of mines shall at all times be open to inspection by any citizen of this State, and upon the request of the governor of the State the chief of the department of mines shall lay said records before said officer, also maps of mines furnished the chief of the department of mines by the district mine inspectors; any chief of the department of mines who shall violate any of the provisions of this act shall, upon conviction, be fined not less than twenty-five nor more than two hundred dollars, and may in the discretion of the court be imprisoned in the county jail not exceeding one year.

The chief of the department of mines shall be a male citizen of West Virginia, and shall be a competent person, having had at least eight years' experience in the working, ventilation and drainage of coal mines in this State, and

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having a practical and scientific knowledge of all noxious and dangerous gases found in such mines, and to enable the said chief of the department of mines to perform his duties he shall have the same authority to visit, enter and examine, the mines as is conferred upon the district mine inspector, and he shall have the authority to call the assistance of any one of the district mine inspectors to any district in the State.

The present chief mine inspector of this State, who according to this act, is designated as chief of the department of mines, shall continue in office under the title of chief of the department of mines until July one, one thousand nine hundred and nine, the expiration of the term for which he was appointed as chief mine inspector, or until his successor shall be duly appointed and qualified, unless sooner removed as provided by law; and the governor of this State, shall with the consent of the senate, appoint a chief of the department of mines whose term of office shall begin July one, one thousand nine hundred and nine, and shall be for four years, or until his successor shall be duly appointed and qualified; and the governor, with the consent of the senate, shall each four years thereafter, appoint a chief of the department of mines for the term of four years or until his successor be appointed and qualified.

The salary of the chief of the department of mines shall be twenty-four hundred dollars, and traveling expenses, which shall be paid monthly out of the state treasury upon a requisition upon the state auditor, properly certified by the chief of the department of mines.

SEC. 2. Within thirty days after this act becomes a law the chief of the department of mines shall appoint such an additional number of district mine inspectors, which with those now in office, shall give one inspector for each mining district within the State, as hereinafter provided, whose term of office shall expire the first day of July, one thousand nine hundred and nine, or when their successors be appointed and qualified, unless sooner removed as provided by law, and he shall direct or prescribe in which of said districts each of said inspectors shall serve; and he shall each four years thereafter appoint one inspector for each of said districts.

The salary of each district mine inspector shall be eighteen hundred dollars per annum, and actual expenses; such salary and expenses shall be paid monthly out of the state treasury upon the approval of the chief of the department of mines: *Provided*, That before payment of such expenses shall be made to the inspector he shall file an account of such expenses, verified by his affidavit, showing that they accrued in the discharge of his official duties; every person so appointed district mine inspector must be a citizen of West Virginia, having a practical knowledge of mining and the proper ventilation and drainage of mines and a knowledge of the gases met with in coal mines, and must be a miner of at least six years' experience in coal mines, or having otherwise been engaged as an employee for six years within coal mines, and he shall not while in office, be interested as owner, operator, agent, stockholder, superintendent or engineer of any coal mine, and he shall be of good moral character and temperate habits. An inspector of mines shall be removed from office by the chief of the department of mines of this State for incompetency, neglect of duty, drunkenness, malfeasance and for other good causes.

Each of the district mine inspectors shall report in writing monthly to the chief of the department of mines the number and condition of all mines inspected by him during each month and shall deliver to the operator or operators of each mine inspected a certificate of inspection, and shall post a duplicate certificate at a prominent place of the operating company where it may be conveniently read by any of the mine employees; said duplicate certificate shall remain posted until a subsequent certificate is issued by the district mine inspector, and he shall visit each mine in his district at least once in every three months, or oftener if called upon in writing by ten men engaged in any one mine, or the owner, operator or superintendent of such mine and make a personal examination of the interior of all mines, and outside of the mine where any danger may exist to the workmen in their respective districts, and shall particularly examine into the condition of the mines as to ventilation, drainage and general safety and shall make a report of such examinations, and he shall see that all the provisions of the mining statutes are strictly carried out; and it shall be unlawful for any district mine inspector to appoint any deputy or other person to do and perform any work required of such inspector; any mine inspector failing to comply with the requirements of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than one hundred dollars nor more than five hundred dollars and be dismissed from office; the chief of the

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department of mines and the district mine inspectors shall each before entering upon the discharge of his duties take oath of office prescribed by the constitution and shall furnish bond in the sum of two thousand dollars, with security to be approved by the governor, conditioned upon the faithful discharge of his duty, a certificate of which oath and bond shall be filed in the office of the secretary of state. Vacancies in the office of the department of mines or district mine inspector shall be filled by appointment for the unexpired term.

SEC. 3. Each district mine inspector shall, for each year ending the thirtieth day of June, make a written report to the chief of the department of mines of his proceedings, stating therein the number of mines in his district, the improvements made in and at the mines, the extent to which this act is obeyed or violated, and such other information in relation to mines and mining as he may deem of public interest, or as may be required of him by the chief of the department of mines; he shall also suggest or recommend such legislation on the subject of mining as he may think necessary; such report shall be filed with the chief of the department of mines on or before the thirtieth day of September next succeeding the year for which it was made; the chief of the department of mines shall annually make a full and complete written report of his proceedings to the governor of the State for the year ending the thirtieth of June; such report shall include the reports of the district mine inspectors, the number of visits and inspections made in the State by the district inspectors, the quantity of coal and coke produced in the State, the number of men employed, number of mines operated, ovens in and out of blast, improvements made, prosecutions, etc., and such other information in relation to the subject of mines, mining inspection and needed legislation as he may deem of public interest and beneficial to the mining interests of the State; such report shall be filed with the governor on or before the thirtieth day of December next succeeding the year for which it was made, and such report shall be printed upon the requisition of the governor and in order that the report shall be annually printed and distributed among the operators, miners and citizens of the State, the sum of fifteen hundred dollars annually is hereby appropriated out of the state treasury for this special purpose.

SEC. 4. The chief of the department of mines, by and with the approval of the governor, shall within thirty days after this act becomes a law, divide the State into twelve mining districts in such a manner as to equalize as far as practicable the work of each district inspector.

SEC. 5. The operator or agent of every coal mine shall, within six months after the passage of this act, make or cause to be made, unless already made and filed, an accurate map or plan of such mine, on a scale to be stated thereon, of one hundred or two hundred feet to the inch; such map or plan shall show the openings or excavations, the shafts, slopes, entries, air ways with darts or arrows showing direction of air currents, headings, rooms, pillars, etc., and such portions of such mine or mines as may have been abandoned, the general inclination of the coal strata, and so much of the property lines and the outcrop of the coal seam of the tract of land on which said mine is located, as may be within one thousand feet of any part of the workings of such mine; a true copy of such map or plan, shall within the six months aforesaid be delivered by such operator to the inspector of his district, to be preserved among the records of his office and turned over to his successor in office; but it is provided that in no case shall any copy of the same be made without the consent of the operator or his agent; and the original map, or a true copy thereof, shall be kept by such operator at the office of the mine, and open at all reasonable times for the examination and use of the inspector, and such operator shall, twice within every twelve months, and not more than seven months apart, while the mine is in operation, cause such mine to be surveyed and the map thereof extended so as to accurately show the progress of the workings, the property lines and outcrop as above provided; and he shall immediately thereafter notify the inspector of his district who shall forward to the said operator, or his engineer the maps held by such inspector to be extended as above required.

SEC. 6. If the operator or agent of any coal mine shall neglect or fail to furnish to the mine inspector of his district any copy of map or extension thereof as provided in preceding section of this act, the mine inspector is hereby authorized to cause a correct survey and map or plan of said coal mine or the extension thereof to be made at the expense of the operator of such mine, the cost of which shall be recoverable from said operator as other debts are recoverable by law, and if at any time the chief of the department of

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mines have reason to believe that such map or plan or extension thereof furnished in pursuance of the preceding section, be materially incorrect such as will not serve the purpose for which it was intended, he may have survey and map or plan or the extension thereof made or corrected and the expense of making such survey and map or plan or extension thereof under the direction of said chief of the department of mines, shall be paid by the operator and the same may be collected as other debts are recoverable by law; and if found correct the expense thereof to be paid by the State.

SEC. 7. After the passage of this act, each operator of a coal mine, before making any additional mine openings, shall furnish the district mine inspector of the district in which the mine is located, a plan of the proposed openings and mine development.

SEC. 8. After six months from and after the passage of this act, it shall be the duty of the mine foreman or the assistant mine foreman of every coal mine in this State to see that every person employed to work in such mine shall, before beginning to work therein, be instructed as to the particular danger, incident to his work in such mine, and furnished a copy of the mining law and rules of such mine.

Every inexperienced person so employed shall work under the direction of the mine foreman, his assistant or such other experienced worker as may be designated by the mine foreman or assistant until he is familiar with the danger, incident to his work, and it shall be unlawful for the operator, agent or mine foreman of any coal mine, to employ any person to work in said mine, or permit any persons to be in said mine for the purpose of working therein, unless they are in communication with at least two openings or outlets, separated by natural strata, of not less than one hundred feet in breadth, if the mine be worked by shaft, and of not less than fifty feet in breadth at the outlets, if worked by slope or drift; to each of said outlets there shall be provided from the interior of the mine, a safe and available roadway properly drained, which shall at all times, while the mine is in operation, be kept free from all obstructions that might prevent travel thereon in case of an emergency, and if either of said outlets be by shaft, it shall be fitted with safe and available appliances, such as stairs or hoisting machinery, which shall at all times, when the mine is in operation, be kept in order and ready for immediate use, whereby persons employed in the mine may readily escape in case of an accident.

This section shall not apply to any mine while work is being prosecuted with reasonable diligence in making communication between said outlets, necessary repairs and removing obstructions, so long as not more than twenty persons are employed at any one time in said mine; neither shall it apply to any mine, or part of a mine, in which a second outlet has been rendered unavailable by reason of the final robbing of pillars, preparatory to abandonment; so long as not more than twenty persons are employed therein at any one time.

For violation of this section the operator, agent or mine foreman, shall, upon conviction, be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than ten nor more than ninety days, in the discretion of the court.

SEC. 9. The operator or agent of every coal mine worked by shaft shall forthwith provide, and hereafter maintain, a metal tube from the top to the bottom of such shaft suitably adapted to the free passage of sound through which conversation may be held between persons at the top and at the bottom of the shaft, also the ordinary means of signaling, and an approved safety catch and a sufficient cover overhead on every carriage used for lowering or hoisting persons, and at the top of the shaft an improved safety gate, and an adequate brake on the drum of every machine used to lower or hoist persons in such shaft; and the said operator or agent shall have the machinery used for lowering or hoisting persons into or out of the mine be kept in safe condition and inspected once in each twenty-four hours, by some competent person; and there shall be cut out or around the side of hoisting shaft or driven through the solid strata at the bottom thereof a traveling way of not less than five feet high and three feet wide to enable a person to pass the shaft in going from one side of it to the other without passing over or under the cage or other hoisting apparatus.

Any operator or agent who shall fail or refuse to comply with the requirements of this section shall be guilty of a misdemeanor and upon conviction shall be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than thirty days nor more than one year, in the discretion of the court.

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SEC. 10. No operator or agent of any coal mine, worked by shaft or slope, shall place in charge of any engine, used for lowering into or hoisting out of said mine persons employed therein, any but competent and sober engineers; and no engineer in charge of such machinery shall allow any person except such as may be deputed for that purpose by the operator or agent, to interfere with any part of the machinery; and no person shall interfere with or intimidate the engineer in the discharge of his duties; and in no case shall more than ten persons ride on any cage or car at one time, and no person shall ride on a loaded cage or car in any shaft or slope.

All slopes, engine planes or motor roads used by persons in any mine, shall be made of sufficient width to permit persons to pass moving cars with safety, or refuge holes of ample dimensions, and not more than sixty feet apart, shall be made on one side of said slope, engine plane or motor roads; such refuge holes shall be kept free from obstructions, and the roof and side thereof shall be made secure and be kept whitewashed at all times; no person shall travel on foot to or from his work upon any slope, engine plane or motor roads when other good roads are provided for that purpose.

For violation of the foregoing provisions of this section the operator or agent or miner shall, upon conviction, be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than ten nor more than ninety days, in the discretion of the court.

SEC. 11. The operator, agent or mine foreman of every coal mine, whether worked by shaft, slope or drift, shall provide and hereafter maintain for every such mine ample means of ventilation, affording no less than one hundred cubic feet of air per minute for each and every person employed in such mine, and as much more as the district mine inspector may require, which shall be circulated around the main headings and cross headings and working places, to an extent that will dilute, render harmless and carry off the noxious and dangerous gases generated therein; and as the working places shall advance break throughs for air shall be made not to exceed eighty feet apart in pillars, or brattice shall be used, so as to properly ventilate the face, and all the break throughs between the intake and return air ways not required for the passage of air shall be closed with stoppings substantially built with suitable material, which shall be approved by the district mine inspector, so as to keep the working places well ventilated.

After six months from the passage of this act, not more than sixty persons shall be permitted to work in the same air current: *Provided*, That a larger number, not exceeding eighty persons may be allowed by the district mine inspector where, in his judgment, it is impracticable to comply with the foregoing requirement.

No operator, agent or mine foreman shall permit any person to work where they are unable to maintain at least one hundred cubic feet of air per minute, but this shall not be construed to prohibit the operator from employing men to make the place of employment safe and to comply with this requirement: *Provided, further*, That while the repair work necessary to get the mine in condition to comply with the law, no person or persons shall be permitted to enter that part of the mine affected except those actually employed in doing the necessary repair work.

In all mines, accumulation of fine dry coal dust, shall as far as practicable, be prevented and such dust shall be kept properly watered down.

For violation of the foregoing provisions of this section the operator, agent or mine foreman, shall upon conviction, be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than ten nor more than ninety days, in the discretion of the court.

No miner or other employee shall take into any mine in this State any larger quantity of powder or other explosive than he may reasonably expect to use in any one shift, and all powder shall be carried into the mine in metallic canisters of a capacity not to exceed five pounds; any person violating this provision shall upon conviction, be fined five dollars for each offense or imprisoned in the county jail not exceeding ten days.

SEC. 12. In all mines generating fire damp and where there is every reason to believe that gas will be encountered in the future workings and developments of the mine, the minimum ventilation shall be one hundred and fifty cubic feet per minute for each and every person employed therein and as much more as one or more of the district mine inspectors may deem requisite and all stoppings on the main entries shall be substantially built with suitable material,

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which shall be approved by the district mine inspector, so as to keep the working places well ventilated; doors on main haul ways shall be avoided in gaseous mines where practicable, and overcasts built of masonry or other incombustible material and of ample strength shall be adopted, and where doors are used they must be built in a substantial manner and hung so as to close automatically when unobstructed.

For violation of the foregoing provisions of this section the operator, agent or mine foreman, shall upon conviction, be fined not less than fifty nor more than five hundred dollars or be imprisoned in the county jail not less than ten nor more than ninety days, in the discretion of the court.

All old unused workings and abandoned parts of the mines must be protected by such safeguards as will prevent the dangerous overflow of any standing gas therein, and all avenues leading thereto shall be so arranged and conducted so as to give cautionary notice to all such workmen in such mines of the danger in entering therein; and in order to secure the safety of the workmen in general against the danger in said abandoned or worked out parts of the mines, notices shall be put up and kept standing, as far as practicable, which shall afford warning to all such workmen not to enter such parts of said mine; and in addition thereto, all persons, other than those specially charged with that duty, are hereby forbidden to enter such abandoned parts of such mines where gas may be found.

It shall be unlawful for any miner, after having exploded in any working place sixty cubical inches or more of powder, in one or more blasts, in any mine known to generate gas in large quantities, to enter such working place and attempt to resume work in any manner whatever with a naked light in less than twenty minutes after the blast has been exploded.

And for violation of these provisions of this act, such person or persons so offending shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than five dollars nor more than one hundred dollars and be confined in the county jail not less than ten days nor more than one year. In all mines where explosive gas, or other gas of a dangerous or poisonous nature, is known to generate in dangerous quantities, the workmen shall be immediately instructed to withdraw from the mine in case of the stoppage of the fan, or heavy falls of the roof which may obstruct the main intake or return air way until such obstruction is removed.

SEC. 13. And it shall be unlawful in all mines where gas is being generated in dangerous quantities to use any other mechanical power for ventilation purposes except fan power, and the fan shall be kept in operation night and day unless written permission be granted by the chief of the department of mines or the district mine inspector in whose district the mine is situated; but no mine operator shall be required to keep such fan going where it is necessary to shut down for the purpose of repairing machinery or doing other work in the mines which may make it necessary.

It shall be the duty of every mine owner or operator in this State whose mine or mines are known to generate fire damp or other dangerous gas or gases, in dangerous quantities to employ a "fire boss" or "bosses" where necessary, who shall be a citizen or citizens of this State, and have such knowledge of fire damp and other dangerous gases as to be able to detect the same with the use of safety lamps and shall have a practical knowledge of the subject of the ventilation of mines and the machinery and appliances used for that purpose, and be a person with at least three years' experience in mines generating gases; it shall be the duty of said fire boss or bosses where employed in said gaseous mines to prepare a danger signal with suitable color at the mine entrance, and no person except the mine owner, operator or agent, and only then in case of necessity, shall pass beyond this danger signal until the mine has been examined by the fire boss, and the same or certain parts thereof reported by him to be safe; it shall further be the duty of said fire boss or bosses to go into all the working places of such mine or mines where gas is known to exist, or liable to exist in dangerous quantities, and carefully examine the same with a safety lamp, and do, or cause to be done, whatever may be necessary to remove from such working place or places, all dangerous gases and make the same safe for persons to enter therein as workmen in such mine or mines; such examination and removal of said gases shall begin within three hours before the time each shift commences work and it shall be the duty of the said fire boss at each examination to leave evidence of his presence at the face of every working place examined, and if the mine is safe he shall remove the danger signal, or change the color thereof to safety, in order that the

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employees may enter said mine and begin work; in the performance of the duties on the part of the fire boss or bosses they shall have no superior officer, but all the employees working inside of said mine or mines shall be subordinate to said fire boss or bosses in this particular work; the fire boss shall upon having completed the examination of the mine before each shift, make a written record of the condition of the mine within a book having a form prescribed by the chief of the department of mines, which record shall at all times be kept at the mine subject to the inspection of the district mine inspector or chief of the department of mines; it shall be unlawful for any person to enter said mine or mines for any purpose at the beginning of work upon each shift therein until such signal or warning has been given by said fire boss or bosses on the outside of said mine or mines as to the safety thereof, as herein provided, except under the direction of said fire boss or bosses, and then for the purpose of assisting in making said mine safe; and each person who shall enter such mine except as aforesaid before such notice or signal has been given, or any operator, agent or fire boss who shall violate the provisions of this section, shall be guilty of a misdemeanor and upon conviction thereof shall be fined not less than fifty dollars nor more than five hundred dollars, or imprisoned in the county jail not less than sixty days nor more than one year.

SEC. 14. Mines in which explosive gas is generated in dangerous quantities from the coal or adjacent strata shall be worked exclusively by the use of locked safety lamps, and no open lamp nor torch shall be used except as may be permitted in writing by the district mine inspector; the safety lamps used for examining any mine or which may be used for working therein shall be furnished by, and be the property of the operator of the mine, and shall be in the charge of some person to be designated by the "fire boss" and at least two safety lamps shall be kept at every coal mine whether such mine generates fire damp or not.

Any operator, agent or other person who shall fail or refuse to comply with the requirements of this section shall be guilty of a misdemeanor and upon conviction shall be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than thirty days nor more than one year, in the discretion of the court.

SEC. 15. In order to better secure the proper ventilation of every coal mine and promote the health and safety of persons employed therein, the operator or agent shall employ a competent and practical inside overseer, to be called mine foreman, who shall be a citizen of this State, and an experienced coal miner, or any person having five years' experience in a coal mine, who shall keep a careful watch over the ventilating apparatus and the air ways, traveling ways, pumps and drainage; and shall see that as the miners advance their excavations, proper break throughs are made, to properly ventilate the mine, and that all loose coal, slate and rock overhead in the working places and along the haul ways be removed or carefully secured so as to prevent danger to persons employed in such mines; and that sufficient props, caps and timbers, as nearly as possible of suitable dimensions, are furnished for the places where they are to be used, and such props, caps and timbers shall be delivered and placed at such points as the rules for the government of each respective mine provide for them to be delivered; and every workman in want of props, cap pieces and timbers shall notify the mine foreman, or such other person who may be designated for that purpose, at least one day in advance giving the length and number of props or timbers and cap pieces he requires; but in case of an emergency the timbers may be ordered immediately upon the discovery of any danger; and it shall be the duty of each miner to properly prop and secure his place in order to make the same secure for him to work therein. The said mine foreman shall have all water drained and hauled out of the working places where the same is practicable, before the miners enter and said working places kept dry as far as practicable while the miners are at work; it shall be the duty of the mine foreman to see that the crosscuts are made as required by law and that the ventilation shall be conducted through said crosscuts into the rooms by means of check doors placed on the entries or other suitable places, and he shall not permit any room to be opened in advance of the ventilation current. Should the mine inspector discover any room, entry, air way or other working places being driven in advance of the air current contrary to the requirements of this act he shall order the workmen working such places to cease at once until the law is complied with.

And the mine foreman shall measure the air current at least twice each month at the inlet and outlet and at or near the faces of the advanced headings

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and shall keep a record of such measurements in a book having a form prescribed by the chief of the department of mines. An anemometer shall be provided for this purpose by the operator of the mine.

And in mines in which the operations are so extensive that all the duties devolving upon the mine foreman can not be discharged by one man, competent persons having had three years' experience in a coal mine may be designated and appointed as assistants, who shall act under the mine foreman's instructions, and shall be responsible for their conduct in the discharge of their duties under such designation or employment.

On all haul ways space not less than ten feet long and two feet six inches wide, between the wagon and the rib, shall be kept open at distances not exceeding one hundred feet apart, in which shelter from passing wagons may be had; it shall further be the duty of the mine foreman to have bore holes kept not less than twelve feet in advance of the face, and, where necessary, on sides of the working places that are being driven toward and in dangerous proximity to an abandoned mine or part of mine suspected of containing inflammable gases or which is filled with water; on all haul ways where hauling is done by machinery of any kind, the mine foreman shall provide a proper system of signals and a conspicuous light, and also for the carrying of a conspicuous light on the front and rear of every trip or train of cars when in motion in a mine, and when hoisting or lowering of men occurs before daylight in the morning or at evening after darkness, at any mine operated by shaft, the said mine foreman shall provide and maintain at the shaft mouth a light of stationary character sufficient to show the landing and all surrounding objects distinctly, and sufficient light of a stationary character shall be located at the bottom of the shaft so that persons coming to the bottom may clearly discern the cages and other objects closely contiguous thereto; no cages on which men are riding shall be lifted or lowered at a rate of speed greater than six hundred feet per minute; no mine cars either empty or loaded, shall be hoisted while men are being lowered or hoisted, and no cage having an unstable self-dumping platform shall be used for the carrying of workmen unless the same is provided with some device by which the same may be securely locked when men are being hoisted or lowered into the mine.

At every mine where ten men are employed under ground it shall be the duty of the operator thereof to keep always on hand at the mine a properly constructed stretcher, a woolen and a water-proof blanket, and all necessary requisites which may be advised by medical practitioner employed by the company, and if as many as one hundred and fifty men [be] employed, two stretchers with the necessary equipments as above advised; the mine foreman, or his assistant, shall visit and examine every working place in the mine every alternate day while the miners of such places are at work and shall direct that each and every working place shall be secured by props or timbers whenever necessary, which shall be placed and used by the miners working therein as in this act provided, to the end that such working places shall be made safe, and the said mine foreman shall not permit nor shall anyone work in a place known to be unsafe unless it be for the purpose of making it safe. The mine foreman shall notify the operator or agent of the mine of his inability to comply with any of the requirements of this section, and it then shall become the duty of any operator or agent to at once attend to the matter complained of by the mine foreman, so as to enable him to comply with the provisions hereof if the same can be practically done. Any operator or agent of any coal mine, or other person who shall neglect to comply with the requirements of this section shall, upon conviction, be guilty of a misdemeanor and shall be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than ten days nor more than ninety days at the discretion of the court. Any mine foreman or employee failing to comply with this section shall, upon conviction, be fined not less than five dollars, nor more than fifty dollars, or imprisoned in the county jail not less than ten days nor more than ninety days, in the discretion of the court.

SEC. 16. The operator or agent of every coal mine shall furnish the inspector proper facilities for entering such mine and making examinations or obtaining information; and if any inspector shall discover that any mine does not, in appliances for the safety of the persons employed therein, conform to the provisions of this act, or that by reason of any defect or practice in or at such mine the lives or health of persons employed therein, are endangered, he shall immediately, in writing, notify such operator or agent thereof, stating in

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such notice the particulars in which he considers such mine to be defective or dangerous and if he deem it necessary for the protection of the lives or health of the persons employed in such mine, he shall, after giving notice of one day to the said operator or agent, in writing notify immediately the chief of the department of mines, who shall immediately examine the mine reported to be unsafe, and if upon such examination the mine reported to be unsafe is in fact found to be in an unsafe condition, the chief of the department of mines shall forthwith order the mine to be closed until it is placed in a safe and proper condition for mining operations; the owner or operator of any mine so closed may apply to the circuit court wherein such mine is located, or the judge thereof in vacation, by petition for an order directing said mine to be reopened, and such court or the judge thereof in vacation shall immediately hear and determine the matters arising upon such petition, and if upon full hearing thereof the court or the judge thereof in vacation shall find that said mine is in a reasonably safe condition, the prayer of said petition shall be granted; but notice of said hearing shall be given to the district mine inspector or the chief of the department of mines three days at the least before said hearing; and in all such hearings the attorney-general shall appear for the State and defend the same.

SEC. 17. No boy under fourteen years of age, nor female person of any age shall be permitted to work in any coal mine, and in all cases of doubt, the parents or guardians of such boys shall furnish affidavits of their ages; any operator, agent or mine foreman who shall knowingly violate the provisions of this section or any person knowingly making a false statement as to the age of any boy under fourteen years of age, applying for work in any coal mine shall, upon conviction, be fined not less than ten nor more than five hundred dollars, or be imprisoned in the county jail not less than ten nor more than ninety days, in the discretion of the court.

SEC. 18. No miner, workman or other person, shall knowingly injure any shaft, lamp, instrument, air course, or brattice, or obstruct or throw open air ways or carry matches or open lights in the places worked by safety lamps or disturb any part of the machinery or appliances, open a door used for directing ventilation and not close it again, or enter any part of a mine against caution, or disobey any order given in carrying out any of the provisions of this act, or do any other act whereby the life or health of any person employed in the mine or the security of the mine is endangered; any person who shall violate the provisions of this section shall, upon conviction, be fined not less than ten nor more than five hundred dollars, or be imprisoned in the county jail not less than ten nor more than ninety days, in the discretion of the court; when any operator of a mine shall in any manner refuse to furnish all supplies necessary for the mine foreman to comply with the requirements of this act after being so requested so to do and by reason of such refusal, loss of life or injury may result to any employee, a right of action for damages may ensue against the operator of the mine wherein such employee has not contributed to his own injury or loss.

SEC. 19. Nor shall any person or persons, or combination of persons, by force, threats, menaces, or intimidation of any kind, prevent or attempt to prevent from working in or about any mine, any person or persons who have the lawful right to work in or about the same, and who desires so to work; but this provision shall not be construed as to prevent any two or more persons from associating together under the name of Knights of Labor, or any other name they may desire, for any lawful purpose, or for using moral suasion or lawful argument to induce anyone not to work in and about any mine; any person or persons who shall violate the provisions of this section shall, upon conviction, be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than ten days nor more than ninety days, in the discretion of the court.

SEC. 20. Whenever by reason of any explosion or other accident in any coal mine, or the machinery connected therewith, loss of life or serious personal injury shall occur, it shall be the duty of the superintendent of the colliery, and in his absence, the mine foreman in charge of the mine, to give notice forthwith, by mail or otherwise, to the inspector of the district, stating the particulars of such accident; and if anyone is killed thereby, to the coroner of the county also, or in his absence or inability to act, to any justice of the peace; and the said inspector shall, if he deem it necessary from the facts reported, immediately go to the scene of such accident and make such suggestion and render such assistance as he may deem necessary for the future safety of the

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men and investigate the cause of such explosion or accident, and make a record thereof, which he shall preserve with the other records of his office; and to enable him to make such investigation, he shall have the power to compel the attendance of witnesses, and to administer oaths or affirmations; and the costs of such investigation shall be paid by the county in which such accident occurred, in the same manner as the costs of the coroner's inquests are now paid; if the coroner or justice shall determine to hold an inquest upon the body of any person killed, as aforesaid, he shall impanel a jury, no one of whom shall be directly or indirectly interested, and the inspector of mines, or the chief of the department of mines, if present at such inquest, shall have the right to appear and testify and to offer any testimony that may be relevant and to question and cross-question any witness; and the coroner or justice shall deliver to the inspector a copy of the testimony and verdict of the jury; any operator, agent, superintendent or mine foreman who shall fail to perform the duty provided in this section shall, upon conviction, be guilty of a misdemeanor, and shall be fined not less than ten nor more than five hundred dollars, or be imprisoned in the county jail not less than ten nor more than ninety days, in the discretion of the court.

SEC. 21. The operator or agent of every coal mine shall annually, during the month of July, mail or deliver to the chief of the department of mines, a report for the preceding twelve months, ending with the thirtieth day of June; such report shall state the names of the operators and officers of the mine, the quantity of coal mined and such other information, not of a private nature, as may from time to time be required by the chief of the department of mines; blank forms of such reports shall be furnished by the chief of the department of mines. At any time any person, company or corporation operating a coal mine shall transfer the ownership of any mine to another person, company or corporation, the person, company or corporation transferring such ownership shall within thirty days make a report to the chief of the department of mines of such change, and a statement of the tons of coal produced since the first of July, last, previous to the date of such sale or transfer of such mine or mines; any operator or agent failing to furnish the reports as required in this section shall be guilty of a misdemeanor and upon conviction, shall be fined not less than fifty nor more than five hundred dollars, or imprisoned in the county jail not less than thirty nor more than ninety days, in the discretion of the court.

SEC. 22. Any operator, agent, superintendent or mine foreman having in charge any mine, who shall knowingly permit any person to work in any part of a mine in violation of instructions issued by the mine inspector, made in compliance with the requirements of this act, shall upon conviction be fined not less than fifty nor more than one hundred dollars for each person permitted to work in violation of such instructions, and any employee who shall work in violation of such instructions shall, upon conviction, be fined not less than ten nor more than fifty dollars.

SEC. 23. In any mine in which solid shooting is done the district mine inspector is authorized to prescribe the conditions under which such solid shooting may be done.

SEC 24. No steam locomotive shall be used in mines where men are actually employed in the extraction of coal, except by the consent of the district mine inspector, but this shall not be construed to prohibit any mine owner from operating a steam locomotive through any tunnel, haul way or part of a mine that is not in actual operation and furnishing coal; any operator or agent who violates this section shall be guilty of a misdemeanor and upon conviction shall be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than thirty nor more than ninety days, in the discretion of the court.

SEC. 25. There shall be adopted by the operator of every mine in this State special rules for the government and operation of his mine or mines, covering all the work pertaining thereto in and outside of the same, which however, shall not be in conflict with the provisions of the mining laws of this State; such rules when established shall be printed on card board, in the language spoken by ten or more employees, and shall be posted up in the drum house, tipple or some other conspicuous place about the mines where the same may be seen and observed by all the employees at such mines, and when said rules are so posted the same shall operate as a notice to all employees at such mine of their acceptance of the contents thereof; and it shall be the duty of each mine operator to furnish a printed copy of said rules to each of his employees when requested by either or any of them; any operator or agent who violates

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the provisions of this section shall be guilty of a misdemeanor and upon conviction shall be fined not less than fifty nor more than five hundred dollars, or be imprisoned in the county jail not less than thirty nor more than ninety days, in the discretion of the court.

SEC. 26. In all prosecutions under this act the circuit court, criminal court and justices of peace have concurrent jurisdiction with the right of appeal to circuit court.

SEC. 27. The provisions of this act shall apply only to coal mines in which five or more persons are employed in a period of twenty-four hours; but no mine employing less than ten men shall be required to employ a mine foreman.

Approved by the governor February 27, 1907.

CHAPTER 82.—*Employment offices.*

SECTION 1. Sections * * * two, * * * one hundred and nine, * * * of chapter thirty-two of the Code of West Virginia * * * [shall] be amended and reenacted * * * so as to read as follows:

Section 2. No person without a state license therefor shall

(z) carry on the business of a labor agency:

* * * * * * *

Provided, That nothing in this chapter contained, and no license or payment under the provisions hereof, shall be taken to legalize any act which otherwise may be in violation of law, or exempt any person from any penalty prescribed for such violation.

Sec. 109. * * * on every license to conduct the business of a labor agency, one hundred dollars; any person or corporation who hires or contracts with laborers, male or female, to be employed by persons other than himself and to be transported out of the State for employment in another State, shall be deemed a labor agency within the meaning of this clause.

Approved by the governor February 27, 1907.

WISCONSIN.

ACTS OF 1907.(a)

Bureau of labor and industrial statistics.

[For section 1021h see Bulletin No. 73, p. 976.]

SECTION 1021t. The commissioner of labor and industrial statistics is authorized to employ, for his office, such extra assistants as he may from time to time deem necessary and fix their compensation: *Provided*, That the compensation so fixed by said commissioner of labor and industrial statistics, shall not exceed the amount fixed by law for similar services: *And provided further*, That the total amount expended for such extra assistants shall be paid out of moneys in the general fund not otherwise appropriated, and shall not in any one year, exceed two thousand five hundred dollars.

Approved July 9, 1907.

Accidents to be reported.

SECTION 1022–53. It shall be the duty of all physicians and surgeons practicing in this State to report within thirty days to the local registrar of vital statistics of the district, any accident to any person whom they are called upon to care for professionally when such person is thereby incapacitated from pursuing his usual vocation for a period of two weeks or more, using such form of certificate as may be provided by the state bureau of vital statistics.

Approved July 1, 1907.

(a) All statutes amended or enacted in 1907 were arranged and numbered as of the Compiled Statutes of the State, in accordance with Joint Resolution No. 119, 1907. Amended sections are indicated below by the word "amended," in parenthesis, following the section number; other sections are new legislation.

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Examination and licensing of barbers.

SECTION 1636–24 (amended). Any person desiring to obtain a certificate of registration under this act, shall make application to such board therefor, pay to the treasurer of said board an examination fee of one dollar, present himself at the next regular meeting of the board for the examination of applicants, and if he shows that he has studied and practiced the trade for two years as an apprentice under one or more practicing barbers, or for at least two years in a properly appointed and conducted barber school, under the instruction of a competent barber, or practiced the trade for at least two years in this State or other States, and that he is possessed of the requisite skill in such trade to properly perform all the duties thereof, including his ability in the preparation of the tools, shaving, hair cutting and all the duties and services incident thereto, and has sufficient knowledge concerning the common diseases of the face and skin to avoid the aggravations and spreading thereof in the practice of said trade, his name shall be entered by the board in the register hereafter provided for, and a certificate of registration shall be issued by him authorizing him to practice said trade in this State. All persons making application for examination under the provisions of this act, shall be allowed to practice the occupation of barbering until the next meeting of the board, and the board shall issue him a permit authorizing him to practice the said trade until the next meeting of the board.

SEC. 1636–25 (amended). 1. Nothing in this act shall prohibit any person from serving as an apprentice in said trade under a barber authorized to practice the same under this act, or from serving as a student in any barber school for the training of students in such trade under the training of a qualified barber.

2. Such apprentice or student shall apply to said board to have his name registered with said board in a book which shall be kept by the board for the registering of apprentices or students, and secure a permit to practice as an apprentice or student under the instructions of a qualified barber. After having practiced the trade for two years under a qualified barber such apprentice or student shall be eligible to become a registered barber and present himself at the next regular meeting of the board held nearest to him for the examination of applicants, and pay the fee of one dollar for examination as provided for in section 1636–24, Statutes of 1898.

SEC. 1636–28 (amended). Said board shall be authorized to adopt reasonable rules providing for the sanitary regulation of barber shops, subject to the approval of the state board of health, and shall have the power to enter any barber shop during business hours for the purpose of inspection of such shops. If any shop be found in an unsanitary condition, or if any barber working therein has been charged with imparting any contagious diseases, the board shall immediately notify the local health officer thereof, and such shop shall be quarantined, and the barber so charged shall not practice his occupation until such quarantine shall be removed by the health officer. Said board shall have the power to revoke any certificate of registration granted by it under this act, for conviction of crime, habitual drunkenness for six months immediately before a charge duly made, gross incompetency, failure to comply with the sanitary rules approved by the state board of health, or for having imparted any contagious or infectious diseases: *Provided*, That before any certificate shall be so revoked, the holder thereof shall have notice in writing of the charge or charges against him, and a day specified in said notice, at least five days after the service thereof, be given a public hearing and be given an opportunity to present testimony in his behalf and to confront the witness against him. Any person whose certificate has been revoked, may after the expiration of ninety days, apply to have his certificate regranted, and the same shall be regranted to him upon his giving satisfactory proof that the disqualification has ceased to exist.

SEC. 1636–30 (amended). Any person practicing the occupation of barber in this State, without having obtained a certificate of registration, as provided by this act, or willfully employ[ing] a barber who has not such a certificate, or falsely pretending to be qualified to practice such occupation under this act, or violating any of the provisions of this act, is guilty of a misdemeanor and upon conviction thereof, shall be punished by a fine of not less than ten dollars nor more than one hundred dollars, or by imprisonment in the county jail not less than ten days or more than ninety days.

Approved April 23, 1907.

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Inspection of factories—Blowers for emery wheels.

[See Bulletin No. 73, pp. 979, 980.]

Regulation and inspection of bakeries.

[See Bulletin No. 73, pp. 980 to 982.]

Employment of children—Paid musicians.

[See Bulletin No. 73, pp. 810, 811.]

Employment of children—General provisions.

[See Bulletin No. 73, pp. 811 to 813.]

Height of wires above railroad tracks.

SECTION 1778a—1. It shall be unlawful for any person, firm or corporation to string any wire, electric or other, over the tracks of any steam railroad company except in accordance with the provisions of this section. All such wires shall be suspended over a double cross arm attached to a pole at each side of the crossing. The poles shall not be less than six inches in diameter at the top, set not less than five feet in the ground, securely guyed, and, unless the railroad right of way is not of greater width, shall be set not more than one hundred feet apart at such crossings. All such wires shall be tied to insulators on pins set in the cross arms. The cross arms shall be attached to the poles by machine bolts and braced by at least one iron brace from each cross arm to the pole. All such wires shall be maintained not less than twenty-five feet above the surface of the rails at such crossing except the street railway trolley wires shall be maintained not less than twenty-two feet above the surface of the rails at such crossings.

SEC. 1778a—2. The railroad commission of Wisconsin is hereby vested with authority to enforce the provisions of this act, and any person, firm or corporation ordered by the commission to change its wires so as to comply with this act failing to comply with such order within ten days from the service thereof shall be liable for a penalty or forfeiture of twenty-five dollars, and to a like penalty or forfeiture for every ten days during which it shall fail to comply with the order of the commission, unless a greater length of time to make such change shall be specified by the commission in said order, or upon cause shown.

* * *

Approved June 20, 1907.

Accidents on railroads.

SECTION 1797m—101. 1. Every public utility shall, whenever an accident attended with loss of human life occurs within this State upon its premises or directly or indirectly arising from or connected with its maintenance or operation, give immediate notice thereof to the commission.

2. In the event of any such accident the commission, if it deem the public interest require it, shall cause an investigation to be made forthwith, which investigation shall be held in the locality of the accident, unless for greater convenience of those concerned it shall order such investigation to be held at some other place; and said investigation may be adjourned from place to place as may be found necessary and convenient. The commission shall seasonably notify the public utility of the time and place of the investigation.

Approved July 9, 1907.

Age and qualifications of telegraph operators on railroads.

SECTION 1809j. 1. It shall be unlawful for any common carrier by railroad, carrying freight or passengers between points within this State, to employ any telegraph operator, except an assistant under an experienced operator, who shall not have attained the age of eighteen years and who shall not have had actual experience as a telegraph operator, or who shall not have had at least six months' actual experience under the tutorship of an experienced railroad telegraph operator, or who shall not have been graduated from a school of telegraphy having at least a six months' course.

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2. Any common carrier by railroad or any of its officers or agents who shall violate the provisions of this act shall be deemed guilty of a misdemeanor and shall be punished by a fine of not less than one hundred dollars nor more than one thousand dollars for each offense.

Approved July 9, 1907.

Hours of labor of employees on railroads.

SECTION 1809l. It shall be unlawful for any common carrier, its officers or agents, to require or permit: (1) Any employee to be or remain on duty for a longer period than sixteen consecutive hours, and whenever any such employee of such common carrier shall have been continuously on duty for sixteen hours he shall be relieved and not required or permitted again to go on duty until he has had at least ten consecutive hours off duty; and no such employee who has been on duty sixteen hours in the aggregate in any twenty-four hour period shall be required or permitted to continue or again go on duty without having had at least eight consecutive hours off duty.

SEC. 1809m. The provisions of this act shall not apply in any case of casualty or unavoidable accident or the act of God; nor where the delay was the result of a cause not known to the carrier or its officers or agents in charge of such employee at the time said employee left the terminal and which could not have been foreseen nor to the crews of wrecking or relief trains.

SEC. 1809n. The railroad commission shall fully investigate all cases of violation of this act and shall lodge with the proper district attorneys information of such violations as may come to its knowledge. The commission shall have the power to employ such inspectors or other persons as may be necessary to enforce the provisions of this act. To enforce the provisions of this act the railroad commission and its agents or employees shall have the power to administer oaths, interrogate witnesses, take testimony, and require the production of books and papers.

SEC. 1809o. Any common carrier or any of its officers or agents violating any of the provisions of section 1809l is declared to be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than one thousand dollars.

Approved July 16, 1907.

Railroad trains—Sufficient crews.

SECTION 1809r. It shall be unlawful for any railroad company doing business in the State of Wisconsin to run over its road, or part of its road, outside of the yard limits, any passenger train with three cars or less, with less than a full passenger crew, consisting of one engineer, one fireman, one conductor and one brakeman; for more than three cars, two brakemen; and on trains of more than three cars the said brakeman [brakemen] shall not be required to perform the duties of the baggage master or express agent while on the road. Nothing in this section shall apply to trains picking up a car or cars between terminals in this State, or to trains propelled by electricity.

SEC. 1809s. It shall be unlawful for any railroad company in the State of Wisconsin to run over its road, or any part thereof, outside of yard limits, any freight train of three cars or more with less than a full train crew consisting of five persons: one engineer, one fireman, one conductor, and two brakemen.

SEC. 1809t. Any superintendent or train master or their assistants or any other officer, or employee of any railroad company doing business in the State of Wisconsin, operating more than twenty-five miles of road who shall send out on the road, or cause to be sent out on the road, outside of yard limits, any passenger train or any freight train whose crew consists of less than the number required in sections 1809r and 1809s of this act, shall be guilty of a misdemeanor, and upon conviction shall be fined not less than fifty dollars for each offense.

SEC. 1809u. The circuit courts of the several counties of this State shall have jurisdiction of offenses under this act.

Approved June 25, 1907.

Liability of railroad companies for injuries to employees.

SECTION 1816 (amended). Every railroad company shall be liable for damages for all injuries whether resulting in death or not, sustained by any of its employees, subject to the provisions hereinafter contained regarding contributory negligence on the part of the injured employee:

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1. When such injury is caused by a defect in any locomotive, engine, car, rail, track, roadbed, machinery or appliance used by its employees in and about the business of their employment.

2. When such injury shall have been sustained by any officer, agent, servant or employee of such company, while engaged in the line of his duty as such and which such injury shall have been caused in whole or in greater part by the negligence of any other officer, agent, servant or employee of such company, in the discharge of, or by reason of failure to discharge his duties as such.

3. In every action to recover for such injury the court shall submit to the jury the following questions: First, whether the company, or any officer, agent, servant or employee other than the person injured was guilty of negligence directly contributing to the injury; second, if that question is answered in the affirmative, whether the person injured was guilty of any negligence which directly contributed to the injury; third, if that question is answered in the affirmative, whether the negligence of the party so injured was slighter or greater as a contributing cause to the injury than that of the company, or any officer, agent, servant or employee other than the person so injured; and such other questions as may be necessary.

4. In all cases where the jury shall find that the negligence of the company, or any officer, agent or employee of such company was greater than the negligence of the employee so injured, and contributing in a greater degree to such injury, then the plaintiff shall be entitled to recover, and the negligence, if any, of the employee so injured shall be no bar to such recovery.

5. In all cases under this act the question of negligence and contributory negligence shall be for the jury.

6. No contract or receipt between any employee and a railroad company, no rule or regulation promulgated or adopted by such company, and no contract, rule or regulation in regard to any notice to be given by such employee shall exempt such corporation from the full liability imposed by this act.

7. The phrase "railroad company," as used in this act, shall be taken to embrace any company, association, corporation or person managing, maintaining, operating, or in possession of a railroad in whole or in part within this State whether as owner, contractor, lessee, mortgagee, trustee, assignee or receiver.

8. In any action brought in the courts in this State by a resident thereof, or the representative of a deceased resident, to recover damages in accordance with this act, where the employee of any railroad company owning or operating a railroad extending into or through this State and into or through any other State or States shall have received his injuries in any other State where such railroad is owned or operated, and the contract of employment shall have been made in this State, it shall not be competent for such railroad company to plead or prove the decisions or statutes of the State where such person shall have been injured as a defense to the action brought in this State.

9. The provisions of this act shall not apply to employees working in shops or offices.

Approved June 19, 1907.

Hours of labor of train dispatchers.

SECTION 1816m. It shall be unlawful for any corporation or a receiver operating a line of railroad, in whole or in part, in the State of Wisconsin, or any officer, agent or representative of such corporation or receiver, to require or permit any operator to remain on duty for more than one period of eight consecutive hours, and when said operator shall have been on duty for said eight hours he shall be relieved and not required or permitted again to go on duty until he has had at least sixteen consecutive hours off duty in any twenty-four hours: *Provided*, This provision shall not apply in case of casualty upon such railroad; in which case said operator may be required or permitted to be on duty not more than one period of twelve consecutive hours in any twenty-four hours, or not to exceed three days of said twelve successive hours each at one time.

2. The term "operator" shall include train dispatchers, and shall be defined and construed to mean an employee who, by the use of the telegraph or telephone dispatches, or reports, transmits, receives or delivers orders pertaining to or affecting the movement of cars, engines, or trains, or who handles such cars, engines, or trains by or under what is known and termed the block sys-

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tem; the term "block system" shall be defined and construed to mean reporting cars, engines, or trains to another office or offices and to the train dispatcher registering the same and operating one or more order or signal devices, and manipulating signal devices affecting the movement of cars, engines, or trains from stations or towers in railroad yards or on main tracks.

3. Whenever the railroad commission shall learn of any violation of this section by any company or by an officer or agent of any such company, it shall be the duty of the railroad commission to investigate such violation at once and it shall have power to require such company to immediately provide such additional employees as are necessary to comply with the provisions of this act.

4. The failure to comply with any of the provisions of this section shall subject the corporation or receiver or any officer, agent or representative of such corporation or receiver to a penalty of not less than one thousand dollars nor more than five thousand dollars for each offense, to be sued for and recovered in the name of the State, with the costs of prosecution, by the attorney-general or under his direction, or by the district attorney for any county in which the violation may occur, and in the circuit court for such county, and such penalty, when recovered, shall be paid into the county treasury of the county in which the violation occurred, for the benefit of such county.

Approved July 11, 1907.

Railroads—Penalties and liabilities.

SECTION 1819 (amended). 1. If any railroad corporation, its officers, agents or servants, violate or fail to comply with any provisions of sections 1798 to 1817 inclusive, such corporation shall for every violation or failure, forfeit not less than ten nor more than one thousand dollars, and be liable to the person injured for all damages sustained thereby.

2. All forfeitures recovered shall inure to the State

Approved July 13, 1907.

Protection of workingmen as members of the national guard.

SECTION 4423m. A person who, either by himself or with another, willfully deprives a member of the national guard of his employment, or prevents his being employed by himself or another, or in respect to his trade, business or employment, because said member of said national guard is such member, or dissuades any person from enlistment in the said national guard by threat of injury to him in case he shall so enlist, in respect to his employment, trade, or business, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than ten dollars nor more than twenty-five dollars, or by imprisonment in the county jail for not less than ten days nor more than twenty days.

SEC. 4423n. No association or corporation, constituted or organized for the purpose of promoting the success of the trade, employment, or business of the members thereof, shall by any constitution, rule, by-law, resolution, vote or regulation, discriminate against any member of the National Guard of the State of Wisconsin, because of such membership in respect to the eligibility of such member of the said national guard to membership in such association or corporation, or in respect to his right to retain said last mentioned membership. It is the purpose of this section and the section immediately preceding to protect a member of the said national guard from disadvantage in his means of livelihood and liberty therein but not to give him any preference or advantage on account of his membership in said national guard. A person who aids in enforcing any such provisions against a member of the said national guard with the intent to discriminate against him because of such membership, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than ten dollars nor more than twenty dollars, or by imprisonment in the county jail for not less than ten days nor more than twenty days.

Approved July 1, 1907.

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CUMULATIVE INDEX OF LABOR LAWS AND DECISIONS RELATING THERETO.

[This index covers the Tenth Special Report of the Commissioner of Labor, which is a compilation of the labor laws, both Federal and State, in force at the close of the year 1903; it also covers labor laws subsequently enacted and published in Bulletins Nos. 57 to 79 of this office, as well as the compilations published in Bulletin No. 73. Many of the laws contained in the Tenth Special Report are followed by brief notes on the decisions of courts relating to them. Similar decisions reproduced in the Bulletin since the publication of the Tenth Special Report are indexed under the appropriate headings, and are indicated by the letter "D" in parenthesis following the name of the State. Opinions of the Attorney-General on the construction, etc., of labor laws are similarly indexed, and are indicated by the abbreviation "Op." in parenthesis.]

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